

# Environmental Finance



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# Momentum builds for biodiversity

**A**s 2022 drew to a close, the combined weight of agreements made at COP27 in Sharm-el Sheikh and its biodiversity-focused cousin – the Convention on Biological Diversity (CBD) COP15 in Montreal – highlighted the growing impetus behind nature-based solutions and the investment needed to halt and reverse the tragic damage being done to the natural world on a global scale.

The extent of the financing needed for biodiversity protection is vast. And it remains to be seen how investors will solve the many challenges ahead in calculating and reporting on biodiversity impacts and dependencies at the portfolio level.

But, as this 2023 edition of the *Environmental Finance* Biodiversity Insight demonstrates, major players in the ESG investment ecosystem, from investors and asset owners to regulators and voluntary carbon market participants, are ready to finance the return to a more nature-positive planet and they understand the urgency to do so.

The landmark deal and key targets agreed as part of the COP15 Global Biodiversity Framework (GBF) in Montreal in December 2022 are discussed in detail in the following pages. However, it is worth highlighting here some of investor reactions that *Environmental Finance* has reported on since:

The GBF agreed at COP15 will aid Nature Action 100 and the Taskforce on Nature-related Financial Disclosures and contribute to improved data for investors, according to an investment manager at Robeco. You can find a detailed discussion of this on [page 22](#).

Francis Condon, head of sustainable thematic engagement at UBS Asset Management, told *Environmental Finance* that the GBF agreement [adds impetus to investors' engagement](#).

And, while HSBC cautioned that the 'vague' COP15 agreement is 'not a Paris moment', Martin Berg, CIO of Nature Based Carbon Strategy at Climate Asset Management, [told \*Environmental Finance\* the agreement "is an important first step"](#).

Alex Burr, ESG policy lead in Legal & General Investment Management (LGIM)'s investment stewardship team said the COP15 text is a foundation for [private sector work on biodiversity metrics](#).

A full summary of investor reaction reported by *Environmental Finance* is on [page 14](#).

Additionally, our reporter Thomas Cox reported from the side-lines of COP15 in Montreal. You can read a summary of his experience [here](#).

In the wake of COP15, it is clear there is unprecedented momentum around the concept of biodiversity in finance. We hope you enjoy this special report on the topic. ■

Annabelle Palmer is content strategist for *Environmental Finance*.

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# TNFD: What the COP15 biodiversity framework means for investors

Preserving nature and biodiversity requires a fundamental change in business models, transparency and financial investment – the Global Biodiversity Framework (GBF) agreed at COP15 in Montreal is a significant step in the right direction and means, at a minimum, that investors and businesses really do need to integrate nature and biodiversity related issues, alongside climate change, into their strategic planning and reporting.

Presided over by China, and hosted by Canada after four years of negotiations and delays, almost 200 governments in the early hours of Monday 19 December 2022 signed an historic agreement to preserve nature and biodiversity.

The question we need to ask now that the GBF has been signed is, what does this mean for ensuring the natural systems global economies and communities rely upon are preserved? And what does this mean for financial firms, investors and businesses? Nature and biodiversity were buzzwords in finance in 2022 but, now with a

GBF agreement in place, more concrete action is expected.

The GBF is structured around a shared vision of living in harmony with nature supported by four goals for 2050 and 23 interim targets to 2030. The goals are ambitious and include increasing areas of preserved natural ecosystems, halting human-caused extinction of threatened species, and restoring wild species populations.

Goals also include ensuring that the value of ecosystem services to communities, indigenous peoples (mentioned 20 times in the document) and economies are recognised, preserved and restored. Benefits from genetic resources and digital sequences are shared and that finance and capacity is made available to implement, closing the estimated \$700 billion per annum financing gap required to protect and restore biodiversity and reducing harmful subsidies.

Of the 23 GBF targets, the commitment to conserve 30% of the Earth by the end of the decade is probably the most significant. However, the full 23 targets support a range of goals and measures which could also have significant implications, notably Target 15 on

Key GBF target themes	GBF targets**	Private financial institution and investor impact
1 <b>Land and water use:</b> 30% Land and Marine conservation* by 2030, halting degradation and supporting restoration of 30% of degraded areas*and increasing the area and quality of green and blue spaces in urban areas	1,2,3,12	High
2 <b>Species extinction:</b> halting species extinction (plus species recovery), sustainable wild species management, sustainable and legal wild species trade and eliminating/ minimising impact of alien species at least 50% by 2030	4,5,6,9	High
3 <b>Pollutants and nutrients:</b> reducing pollutant output and nutrients and pesticides by at least half, working towards eliminating plastic pollution	7	High (specific industries)
4 <b>Climate change impact reduction:</b> on biodiversity and increasing resilience through use of nature-based solutions	8	Medium
5 <b>Sustainable farming practices:</b> in aqua/agriculture fisheries and forestry including reduction in harmful subsidies by at least \$500B per year by 2030	10,18	High (specific industries)
6 <b>Integrating nature into planning, policy and development:</b> in addition, securing ecosystem services benefits to local communities and indigenous peoples (including genetic and digital sequencing information (DSI), use of biotechnology)	11,13, 14,17	Medium
7 <b>Transparency and monitoring disclosures:</b> legal, administrative and policy measures taken to encourage and enable Financial Institutions and Businesses to monitor and disclose on biodiversity risks, dependencies and impacts, as well as improving consumer information to enable people to make better choices, aiming to reduce over-consumption and halving food waste by 2030	15, 16	High
8 <b>Mobilising finance and capacity:</b> totalling \$200 billion per year including from developed to developing countries (\$25 billion by 2025, \$30 billion+ in 2040), domestic financing, blended finance, green bonds and biodiversity offsets and credits. Innovation and capacity, data availability – including rights of indigenous people and gender equality in decision making and access. Calls to make optimal use of synergies between climate action and nature action	19-23	High

\*30% of world’s lands, inland waters, coastal areas and oceans

\*\*The full text of the agreement is attached [here](#)

disclosures for business and finance. The goals can be distilled into eight key themes and implications:

### What happens next?

Whilst the GBF agreement is not legally binding as it stands, it expects national governments to implement the goals and targets into national biodiversity strategies and action plans (NBSAPs), to report on progress, as well as to raise awareness, education and communication on the importance of biodiversity. There will also be international, NGO, media and public pressure to honour these agreements and see progress, and there will be a COP16 in two years' time

What was important to note at the conference was the increased and significant presence and voice of business and finance, with over 110 private financial institutions present, and around an equal number of businesses as well as public development banks. The voice of business was also very loud and present in the Business for Nature call to make nature related disclosures mandatory, with over 330 businesses and financial firms signing the declaration.

The key question is what happens next? To what degree (and pace) do countries now embrace the agreements signed in the GBF? Do private and public financial institutions adopt, align to and incorporate targets as we have seen in the sustainable development goals (SDGs) and do consumers also change behaviour based on expectations on information available from products or into financial investments based on the GBF?

Whilst we are not going to see a sudden wave of new projects and initiatives, we should see significant shifts and emphasis over the coming 12 to 18 months and we should also see, as the GBF calls for, companies take a much more integrated approach across climate and nature risks, impacts and adaptation strategies. Many private sector organisations are already including nature and biodiversity into their strategies. They are already taking a more integrated view across climate and nature and will use the COP15 GBF agreement to formalise and increase ambition in their strategies and targets. In particular, the targets on: Land Use; Integrating Nature into Planning, Monitoring and Disclosures; and for key industries' consumer information.

For national financial regulators, local and global financial standards bodies, GBF Target 15 on monitoring and disclosures is significant and provides increased momentum for voluntary global industry bodies such as the TNFD (Taskforce on Nature-related Financial Disclosures) to be adopted.

The TNFD is a market-led, government-supported and science-based initiative with over 800 organisations supporting TNFD's work through the TNFD Forum. The group was formally launched in June 2021 following an eight month preparation phase involving over 200 organisations, and received a mandate from both the G7 and G20 governmental groups.

The TNFD mission is to develop and deliver a risk management and disclosure framework for organisations to report and act on evolving nature-related risks, with the ultimate aim of supporting a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes.

The TNFD Taskforce (effectively the design team) is comprised of 40 individuals from across the finance sector, businesses and market service providers, representing \$20.6 trillion assets under management and 70% of the globally systemic banks (G-SIB) as



David Craig, TNFD

identified the Basel Committee assessment methodology.

Co-chaired by myself, former CEO of Information giant Refinitiv, and Elizabeth Mrema, executive secretary of the CBD (Convention on Biological Diversity) the Taskforce has released three beta versions of the framework to date, including a definitional outline of nature that includes four realms (land, ocean, freshwater and atmosphere) and 34 biomes.

It is aiming to create a global standard approach, modelled on and re-using the four pillars of the Taskforce on Climate-related Disclosures (Governance, Strategy, Risk Management, Metrics and Targets) but introducing specific nature and biodiversity considerations in the assessment of nature related dependencies, impacts, risks and opportunities; one of the most important considerations being location of a company's direct operations and its suppliers, and their dependency and impact ecosystem services and the state of nature in these specific locations.

The release of the final beta version of the TNFD Framework is scheduled for March this year, which will include disclosure recommendations, and the final recommendations are due in September 2023.

The ISSB (International Sustainability Standards Board) also announced at COP15 that it will incorporate nature and biodiversity into future standards development, with an initial focus on building the links with the ISSB draft climate standard (including consideration of the work of the TNFD, an existing ISSB knowledge partner).

As these voluntary and mandatory standards are developed, the GBF also calls for governments and regulators to implement legal and policy changes to enable disclosures. It is therefore reasonable to expect more mandatory reporting requirements, building on standards already emerging from financial regulatory bodies today. It is also expected that more and more companies and financial investors will put nature and biodiversity as an integrated part of their investment, risk assessment and strategic planning, acknowledging that the risks of not doing so greatly outweigh the costs. ■

David Craig is co-chair of the Taskforce on Nature-related Financial Disclosures and Advisory Council, Sustainable Markets Initiative

# Seizing the nature investment opportunity

Climate Asset Management has just raised \$650 million for its two natural capital investment strategies. **Martin Berg**, the chief investment officer of its Nature Based Carbon Strategy, explains its approach

**Environmental Finance: How have the COP15 biodiversity summit and the preceding climate talks changed the context for investing to protect biodiversity?**

**Martin Berg:** COP15 has helped elevate nature to a mainstream investment theme. I've never seen so much coverage of biodiversity loss and why it's an important issue for investment. It has certainly changed the narrative.

Over the last two years, we've seen much more attention given to nature, preceding the two recent summits. At COP26 in Glasgow, for example, the nexus between climate and nature started to become clear for many investors.

They view the issue from two directions. Some see nature as an upcoming investment theme, like climate. Others look at the issue from the disclosure side. For example, French investors face disclosure requirements under Article 29 of France's Energy Transition Law, while others are assessing how the Taskforce on Nature-related Financial Disclosures (TNFD) might affect them.

**EF: Are there any specific elements of the Global Biodiversity Framework (GBF) agreed at COP15 that are particularly significant?**

**MB:** The most important outcomes for us are Targets 14, 15 and 19. These require the scaling up and alignment of private and public financial flows with the goals and targets of the GBF, as well as ensuring disclosure of private sector impacts and dependencies on nature. Not only do we see potential for governments to stimulate financial flows towards nature conservation, but it could incentivise the private sector to take action. In some respects, it's analogous to the Paris Agreement's Article 2.1c: many observers saw that as a trigger for increasing activity from public and private stakeholders.

**EF: What is the approach you are taking at Climate Asset Management at integrating biodiversity into your investments?**

**MB:** Climate Asset Management is exclusively dedicated to nature. At the end of last year, we raised \$650 million in initial commitments for our two real asset strategies, which target distinct groups of investors.

Our Natural Capital Strategy offers institutional investors real asset investments in nature-related projects that aim to deliver financial returns alongside positive impacts. The strategy is built around acquiring agricultural and forest-related land in developed markets and improving its sustainability. We aim to achieve returns through sustainable yields, increased land value and, where possible, additional revenue streams from natural capital, whether carbon credits or emerging biodiversity-related credits or incentive schemes.

Our Nature Based Carbon Strategy targets landscape restoration projects in developing economies to deliver biodiversity improvements at scale for climate resilience, community benefits, and high-quality carbon credits with a view to enabling global corporations to achieve their decarbonisation targets.

The first strategy is entirely investment-led, combining returns with impact, while the second is impact-focused, aiming to deliver high-quality carbon credits to its mainly corporate investors.

**EF: What sort of biodiversity outcomes are your investors looking for?**

**MB:** Generally speaking, investors are looking for measurable outcomes. Measurable, additional long-term impact is a fundamental component of our investment strategy. Our impact framework measures a variety of impacts, including improvements in biodiversity. First, we assess the situation on the ground to quantify the biodiversity 'status quo'. We then design strategies that, among other things, lead to improvements in nature. We can do this because, as a real-asset strategy, we control the underlying projects.

**EF: Which metrics do you look at specifically?**

**MB:** For biodiversity, we focus on measuring ecosystems in terms of their extent and condition. Specific metrics will vary depending on what's appropriate for each landscape. In one landscape, our activities might improve invertebrate populations by reducing chemical inputs so we will measure that. In another, it might improve habitat connectivity across a forest. Grouping these metrics under extent and condition allows us to report consistently across the portfolio.



Martin Berg

## I've never seen so much coverage of biodiversity loss and why it's an important issue for investment

**EF:** How does your approach to investment dovetail with the work of the TNFD?

**MB:** We're actively involved with the TNFD discussions: HSBC is a member of the Taskforce and, through our shareholder HSBC Asset Management, we are participating in several working groups, particularly around targets and metrics.

We look at the TNFD through two lenses. The first concerns the ability to communicate nature-related investment opportunities to the market. As a dedicated nature-focused asset manager, we are supportive of the TNFD's ambition to communicate these opportunities clearly and responsibly. As we've seen with climate-related disclosures in the past, investors initially focus on the risks, but then quickly consider the opportunities involved.

The second concerns supporting the development of standardised disclosure frameworks. We have partnered with Phoenix, the UK's largest long-term savings and retirement business, to pilot disclosure against the TNFD framework. We intend to apply the 'LEAP' approach, which stands for Locate, Evaluate, Assess and Prepare, to several potential natural capital investments across multiple geographies to understand the approach, including data requirements, prioritisation, target setting and disclosure, and to contribute that learning to inform the market.

**EF:** There's considerable civil society concern about biodiversity offsetting. How do you respond to those concerns?

**MB:** We understand the concerns. In many cases, because biodiversity is priceless, putting a price on it just doesn't feel right. It also raises many moral concerns, as we have seen not least with the discussion on carbon.

But on the flip side, the economic benefits that biodiversity provides are rarely priced in, and that causes a lot of issues. If the true value of biodiversity were clearer, investors and corporates would treat biodiversity very differently. It's a dilemma that needs to be overcome for progress to be made.

In our view, there's a middle way, where smart regulation incentivises the preservation of biodiversity rather than its destruction. Policy makers should consider both the economic value and the moral aspects of nature preservation. At COP15, we saw serious conversations about the development of a voluntary credit market, not to offset impacts, but to deliver additional positive outcomes for nature. It's a tricky balance to strike but, if biodiversity offsetting can be implemented in the right way, it has the potential to catalyse investment in biodiversity.

**EF:** We need to mobilise hundreds of billions of dollars annually to close the biodiversity funding gap. What are the key barriers we need to overcome to do so?

**MB:** Metrics and regulation, which are interlinked. Regulation would be much easier if we had clear biodiversity metrics; unlike carbon, there is no single metric for biodiversity to focus on, since the value of biodiversity very much depends on the local context. It's therefore a challenge to settle on a single indicator for regulation.

On the positive side, a lot of work is being done as part of assessment frameworks. How to improve these was a major topic of conversation at COP15 and more focus on this aspect is needed to make progress.

**EF:** What about deal flow – are there enough projects for nature-orientated investors to direct capital into?

**MB:** For sure, but it depends on the approach. Opportunities that are clearly linked to existing economic activity are easier and tend to have more pipeline. Our Natural Capital Strategy adopts this approach and links improvements in biodiversity to sustainable agriculture and forestry investments. Alongside potential payments for biodiversity, there should also be more traditional revenue streams from the underlying yield and land value appreciation.

Where the reliance is exclusively on revenue streams from biodiversity or natural capital, there's a whole basket of other opportunities but these are more challenging. It comes back to regulation or voluntary action: if there were a clear evaluation of the benefits of biodiversity preservation, then the financing would be less of a challenge, and ultimately the pipeline would grow exponentially. ■

For more information, see:  
<https://climateassetmanagement.com/>

# Engage to change

Norges Bank Investment Management (NBIM)'s lead investment stewardship manager Snorre Gjerde outlines how the sovereign wealth fund is approaching the topic of biodiversity loss and ecosystem degradation

**N**BIM manages the sovereign wealth fund of Norway. The Norwegian Government Pension Fund Global was established in 1990 to invest the surplus revenues of the Norwegian petroleum sector for future generations, and is sometimes referred to as Norway's Oil Fund.

The fund's assets total more than NOK 12 trillion (\$1.4 trillion dollars) and it holds 1.4% of the world's listed companies, making it one of world's largest sovereign wealth funds.

This position means that financially material sustainability issues such as biodiversity loss and ecosystem degradation are priority topics on NBIM's ownership agenda.

## **Environmental Finance: What does biodiversity risk mean for NBIM?**

**Snorre Gjerde:** The fund is owned by the Norwegian people and our job is to manage the fund in a way that benefits the generations of today but also future generations. With this time span, the return of our portfolio is dependent on sustainable development – not just in economic terms but also in environmental and social terms.

Our equity portfolio covers more than 9,000 companies in over 70 markets. Essentially, we own a small slice of the global economy. It follows that if half of global GDP depends on nature and its services, then the value creation of the companies in our portfolio is also dependant on healthy ecosystems and the biodiversity that underpins them.

With natural ecosystems increasingly coming under pressure, it means that the companies we invest in can face financial risks associated with their impacts and dependencies on biodiversity.

Furthermore, being so broadly diversified means that if one company in our portfolio is involved in unsustainable use of natural ecosystems then this can have financial consequences for other companies that we invest in.

## **EF: How does NBIM approach biodiversity risk as part of your responsible investment strategy?**

**SG:** At the market level we work to develop clear expectations on how companies should manage and account for global challenges such as biodiversity loss, deforestation, and water usage etc. We also support the development of better standards and business practices that promote well-functioning markets. For example, we are an active member of the Taskforce on Nature-related Financial Disclosures (TNFD).

At the portfolio level, we integrate environmental, social and governance (ESG) information into our investment process and may choose to divest from companies that have heightened sustainability risks. For example, in 2021 we divested from seven companies due to concerns around their biodiversity impacts.

We also engage with the companies we own to encourage them to develop more sustainable practices and business models. Some of the key focus areas in our proactive dialogues this year have been deforestation-free commodities, resilient food systems and regenerative agriculture, and responsible mining practices.

Our dialogues are very much a two-way process – we want to learn about the challenges companies are facing and how they are approaching these, but also provide them with feedback and encourage them to conduct their business activities in accordance with our expectations as an asset owner.

With natural ecosystems increasingly coming under pressure, it means that the companies we invest in can face financial risks associated with their impacts and dependencies on biodiversity

## **EF: How are you measuring biodiversity impacts and dependencies at the portfolio level and what are the challenges?**

**SG:** Biodiversity impacts and dependencies can be challenging to quantify. Impacts are often localised and may even vary depending on the season. This means that there are both temporal and spatial dimensions to consider in our analyses.

There's a lot of talk about data availability. However, there are some impressive datasets out there, such as data on species richness, protected sites, water stressed areas, etc. The challenge

is that much of the data is fragmented and we need to bridge the location-specific data with the operations and value chains of the securities that we hold in our portfolio.

An important element of the TNFD framework is the LEAP (Locate-Evaluate-Assess-Prepare) process, which focuses on locating an organisation's interface with nature and assessing the associated risks and opportunities.

There are also several emerging analytical tools that can be used by investors. Last year, we utilised the ENCORE tool, developed by the Natural Capital Financial Alliance, to estimate our equity portfolio dependency on ecosystem services and we found that almost 30% of the portfolio's value was 'moderately-' or 'highly-dependent' on one or more natural ecosystem services.

We are also seeing new technological tools develop, such as geospatial analytics, and leading companies are sharpening their disclosures, for example by publishing coordinates of palm oil suppliers or proximity of mining sites to protected areas. We are positive that these developments will help us enhance our understanding of the impact and dependencies of our portfolio in the future.

**EF: What do you hope the TNFD can achieve?**

**SG:** We hope the TNFD will help create a globally consistent and scalable methodology to assess the localised state of nature and inform investor and company action to manage the risks related to nature loss. That, in turn, should make it easier for us to compare companies and identify the risk concentrations in our portfolio.

We have been a member of the TNFD since 2021 and I represent NBIM on the 40-person strong taskforce. We decided to engage with the TNFD because it is well-aligned with our own priorities on addressing nature loss and environmental degradation.

Working on the taskforce has been very rewarding so far, and we have some busy but productive months ahead of launching the final framework in September 2023.

**EF: How are you seeking to have a positive biodiversity impact with your investments?**

**SG:** We are invested in over 9,000 companies and in roughly 50% of these we are one of the top five shareholders. This often gives us a robust starting point for 'engage to change'.

When we engage, we talk to leading companies to learn where best practice is at, and where the "gold standard" can be pushed to. We also engage with less advanced companies to encourage them to move in the direction of the leading companies, thereby contributing to shifting the industry to become more sustainable.

Being so broadly diversified means that we are often invested across value chains, and so we can engage both upstream and downstream to encourage companies to move towards common solutions.

We try to use our convening power to bring such players together to share knowledge and build capacity. For example, we recently organised a roundtable at our Singapore office with regional banks and consumer goods producers on the topic of financing deforestation-free commodity supply chains.

**EF: How do you balance being a long-term shareholder who 'engages to change' with divesting from companies**



Snorre Gjerde, NBIM

**that are not aligned with your sustainability expectations?**

**SG:** Last year we conducted around 4,000 assessments on how the companies we invest in manage sustainability risks and opportunities across different topics. The clear signal from the data was that the companies we engage with improved more than the sample at large. This is encouraging.

While we want to be an owner throughout the transition to more sustainable business practices, there are some scenarios in which we will decide to divest. This will typically be because the company is involved in environmental degradation serious enough to constitute a breach of our ethical guidelines – in which case the company will be excluded, and the name will also be published – or because our analysis suggests their business model is unsustainable and they are not receptive to our 'engage to change' approach.

Between 2012 and 2021 we have divested from 366 companies due to concerns about the sustainability of their business models.

**EF: What will be your focus for 2023?**

**SG:** In 2023, we will continue to build out our sector dialogues that are focused on deforestation, food systems and agriculture, and address material nature risk issues in other exposed industries. We will also remain very involved with the TNFD as we drive towards the publication of the final framework.

The reality of deteriorating ecosystems and species extinction can feel like an uphill battle. However, seeing positive developments provides hope that it is possible to transform industries to be more environmentally friendly. ■

# Natural selection: the investment case for addressing biodiversity loss

As the crisis in nature becomes more visible, investment opportunities arise from reducing pressure on biodiversity – although nature restoration is proving thornier, say **Lisa Beauvilain**, global head of sustainability and stewardship, and **Chris Dodwell**, head of policy and advocacy, at Impax Asset Management

**Environmental Finance: Why does Impax see biodiversity loss as a crucial issue for investors?**

**Chris Dodwell:** As a specialist investor in the transition to a more sustainable economy, Impax has been taking biodiversity into account in our investment approach for many years. But its importance has risen with growing awareness of the impacts and dependencies of economic activities on nature. For example, 13 of the 18 sectors that comprise the FTSE100 Index are associated with production processes with high or very high material dependence on nature. [One-third of global crop production depends on animal pollinators](#) and three-quarters of crops are partially dependent on them. Roughly [60% of medicines are based on natural organisms](#).

A big part of the problem is that, as the Dasgupta report for the UK government observed, nature and its processes are in large measure silent and invisible. This makes it hard to assess how dependent our economic prosperity is on nature's services, as well as how to trace our impacts on the natural world. We also recognise that, in comparison with the climate emergency, we are waking up late to the challenges that nature faces.

We have seen a significant increase in policy activity over the last year or so, such as the Taskforce on Nature-related Financial Disclosure (TNFD), the nature-related pledges made at COP26 recognising the linkages with climate action, and the interest in the COP15 biodiversity summit.

All this means that nature is one of the top three themes that Impax is focussing on from both an advocacy and engagement perspective, as recognised in our [updated policy on nature, biodiversity and deforestation](#).

**EF: How does Impax integrate biodiversity and nature into its investment process?**

**Lisa Beauvilain:** The starting point of our analysis is what we call the Impax Sustainability Lens. We use it to assess how roughly 160 subsectors are exposed to particular sustainability issues, in this case their impacts and dependencies on nature and biodiversity. We use the Lens as a sectoral materiality map, helping inform our proprietary company-specific ESG analysis.

The whole discipline of biodiversity risk analysis is quite new and data or metrics are still very scarce. So, if it has been determined that biodiversity is a material risk to a company, we'll look at whether the company has processes in place to analyse exposures to biodiversity hotspots, for example, and whether there are processes in place to manage and mitigate these exposures. We



Chris Dodwell

then give the company a score on its preparedness.

We are engaging with exposed companies, focusing on several topics. These include whether companies have governance and oversight policies in place; how much transparency they have over their supply chains; and the extent that they measure and report the location-specific nature of their exposure, as well as plans for mitigating these risks and exposures.

We see a lot of merit in the TNFD's 'LEAP' approach, which encourages companies to locate, evaluate, assess and prepare or report on the biodiversity risks they face. It's very well aligned with our approach.

**EF: Are there any investable solutions available which can prevent biodiversity loss?**

**LB:** We've been investing in environmental solutions at Impax for more than 20 years, and a lot of those themes help to reduce pressures on biodiversity. We cannot solve climate change without solving the biodiversity challenge and vice versa, hence the linkages between the solutions are strongly aligned. We find it useful to think about addressing nature loss through the IPBES [Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services] framework, which sets out the five most significant direct drivers of biodiversity loss: land-use change; overexploitation of organisms; climate change; pollution; and invasive non-native species.

For land-use change, solutions around food waste reduction,

plant-based proteins, alternative feeds to soy, resource efficiency and circularity are all extremely relevant to addressing deforestation. On overexploitation, we could point towards sustainable aquaculture, although you must be extremely selective in identifying companies that are truly sustainable. Alternative animal feeds can also be a good solution here.

On climate change, obviously there is considerable overlap with our environmental and climate solutions, with sub-sectors like renewable energy or energy efficiency. When it comes to pollution, one of the biggest solutions concerns water treatment, but we also view testing as incredibly important: you have to begin with testing to understand where pollution is taking place. Plastic pollution is a big issue for marine biodiversity, but you have to be mindful about trade-offs. Reducing single-use plastic can mean you use more virgin fibres instead, potentially further accelerating deforestation.

Roughly 90% of global trade is through shipping and it is responsible for enormous problems with invasive species, such as zebra mussels, in many regions of the world. Companies providing ballast water treatment provide an important example of an investible solution, however.

**CD:** We are acutely aware that almost all the investible solutions identified to date focus on reducing pressure on biodiversity. While this is a crucial first step, there are comparatively few examples where we can commercially invest in the restoration of nature. So we're working with Imperial College London to find case studies where companies are investing in activities that restore nature in order to reduce risks and generate commercial benefits, such as supply chain resilience, cost reductions, revenue creation and commercial advantage. While it is difficult to find cases where biodiversity is the main investment driver, investing in things like climate mitigation and clean water often have substantial benefits to the preservation of natural biodiversity, and in a few cases help restore it. By shining a light on these examples, we hope to identify actions which industry and governments can take to facilitate nature-positive investments.

**EF: Which biodiversity-focused policy initiatives is Impax supporting?**

**CD:** Addressing biodiversity loss is intrinsically difficult due to limitations in our understanding of nature, the number of drivers of biodiversity loss and the lack of common definitions and metrics. In order to unpack these challenges, we decided to focus our initial efforts on deforestation, not least because of the clear links to climate action.

So, ahead of COP26 in 2021, we decided to join the Finance Sector Commitment to Eliminate Commodity-Driven Deforestation. Over the last year, we have been working with more than 30 signatories to share lessons learned on exposure to deforestation risk and effective investment policies, as well as kicking off joint engagement with companies on how to address deforestation within their supply chains.

We also joined the Natural Capital Investment Alliance, which is focused on the 'nature-positive' element of the challenge. The Alliance has identified the policy frameworks necessary to encourage nature-positive investment, again starting with deforestation. In addition to disclosure of nature-related financial risks, these frameworks should include national and sectoral policies



Lisa Beauvilain

in forest-rich countries; action by consumer countries, such as the new deforestation legislation in the EU; and the development of financial incentives to support standing forests, whether through carbon markets, intergovernmental payments or, interestingly, supply chains for premium, deforestation-free products.

But we also need to recognise that efforts to tackle other aspects of biodiversity loss are at a much earlier stage. A good starting point would be to break the challenge down into specific 'biodiversity imperatives' and develop clearer theories of change which set out more explicitly the role of public and private sector actors.

**EF: To what extent has the outcome from COP15 helped provide policy certainty?**

**CD:** There were five things we were hoping to get out of COP15. The first is a meaningful 'apex target' that would resonate with the general public, corporates and investors – something like halting and reversing biodiversity loss by 2030. The second is a clear mechanism for translating that back into national policy action – the equivalent of the NDC [Nationally Determined Contributions] process that exists within the UN climate convention, where countries are required to set out how they are going to contribute to the global goals within their own borders and by supporting others.

Third, as signatories to the Make it Mandatory campaign, we have been calling for the inclusion of a requirement for companies and financial institutions to disclose their impacts and dependencies on nature. Fourth, we wanted recognition of the need to align financial flows – both public and private – with the goals of the Convention on Biological Diversity – the equivalent to Article 2(1)(c) of the Paris Agreement, which has put the actions of both development banks and private investors in the spotlight. Finally, we were hoping to see a call for reform and redirection of environmentally harmful subsidies.

We were very pleased to see progress on all of the above in the Kunming-Montreal Global Biodiversity Framework. Although we welcome COP15 as a starting point, there is much work to be done in both implementing the framework and addressing important gaps in our approach to tackling this crucial challenge. ■

For more information, see [www.impaxam.com](http://www.impaxam.com)

# Mapping impact to drive change at Holcim

While organisations increasingly recognise the risk of biodiversity loss to operations and supply chains, very few are undertaking the necessary steps to map, measure and report such impacts and dependencies. **Renata Pollini**, head of nature at building materials company Holcim, is taking the firm to the next stage as it includes measurable water and biodiversity commitments in its new nature strategy

**Environmental Finance:** What progress is being made amongst corporates seeking to better understand their impacts and dependencies on nature?

**Renata Pollini:** We know that businesses rely on nature for resources and ecosystem services. While we have several frameworks that help companies to assess and disclose their climate-related impacts, we're still catching up on the nature side.

The Global Biodiversity Framework agreed during COP15 in Montreal, the Taskforce on Nature-related Financial Disclosures (TNFD), and the Science-based Targets (SBTs) for Nature should all help push this forward. More companies will be expected to put nature strategies in place with measurable targets and start to report on nature-related risks and opportunities. As a result, I think we will see more companies start to report on impacts and dependencies this year, and in the years to come.

In addition, as a consequence of COP15, it is expected that countries will start to put policies in place that incentivise companies to minimise their impact on nature and biodiversity loss.

**EF:** What does leadership on biodiversity mean for a company such as yours?

**RP:** Companies need to first of all understand their impacts and dependencies on nature. Then put a robust strategy in place to minimise impact or even optimise positive impacts because impacts can be negative or positive. That's what we are doing at Holcim.

It also needs to be high on the agenda at the executive level. At Holcim, our nature strategy had the approval from the board of directors. I report to Holcim's chief sustainability and innovation officer, and she reports directly to the CEO. We have a lot of interaction across many aspects of this strategy and the progress we are making. For companies to take nature seriously, senior leaders must be engaged on it.

Sustainability target-driven incentives within a company are also important. At Holcim, we are incentivised on targets on three sustainability themes: climate, circular economy, and freshwater withdrawal. If we meet those targets, the senior leaders get their bonus.

**EF:** Can you outline Holcim's biodiversity-related commitments?



Renata Pollini, Holcim

**RP:** We launched our nature strategy in September 2021 with measurable water and biodiversity commitments.

For biodiversity our commitment is to deliver a measurable, positive impact on biodiversity backed by a scientific methodology by 2030. This progress will be based on biodiversity indicators within our science-based methodology; the Biodiversity Indicator and Reporting System. This methodology was developed together with IUCN – the International Union for Conservation of Nature. The methodology is tailor-made for our sector.

We are measuring our biodiversity baseline at the moment and by 2024 we should have our baseline assessed. By 2030 we will measure our progress and would expect the value of the biodiversity index to increase.

Action is needed now to achieve this, and we have already put actions in place to improve the baseline. For example, by the end of



Quarry rehabilitated in Spain



Quarry rehabilitated in Switzerland

2022 we had two milestones that we wanted to reach. One is to have quarry rehabilitation plans in place for all our active quarries based on Holcim's Quarry Rehabilitation and Biodiversity Directive. The other is to have biodiversity management plans in active quarries with high biodiversity value.

For water, we have different measurable targets to lower our water intensity across our main business segments by 2030. We also have another commitment to replenish freshwater with a target to reach 75% of our sites located in water-risk areas, "water-positive" by 2030.

**EF: What are the challenges in gathering data, identifying metrics and accounting for biodiversity?**

**RP:** We are located in more than 60 countries and have more than 2,000 operating sites. While we have a good understanding of our impacts across these operations, it is harder to identify and prioritise our impacts at the upstream and downstream levels.

On the upstream side, we have more than 100,000 tier one suppliers. It is not always straightforward to track where they are located. While with our own operations we can use actual data, on the upstream side we use a model called Exiobase. It helps us to report our impact on emissions, water consumption, biodiversity and land use, for example. It is a model – not actual data – but it gives us a good understanding of our supplier's environmental impacts.

The downstream side is even more complicated. In many cases we don't track our nature impact at the end user level. One of the unanswered questions we have is where does the analysis start and end for a large company like ours?

Another challenge is for companies to decide which metrics to report against. I am hoping that the TNFD and the SBTs for Nature will help us prioritise which metrics and indicators to use.

**EF: As a TNFD taskforce member, how are you working with the TNFD and preparing for related disclosure requirements?**

**RP:** At the moment the TNFD is establishing the sector guidance groups and I will be leading the group for infrastructure and real estate.

At Holcim, we are piloting the TNFD framework already. From this we can establish what the challenges are. We are also working with other companies in the same sector to see how they are approaching it. From this, we can provide feedback to the TNFD on improvements that need to be made.

**EF: As you develop your understanding of your biodiversity impacts and targets at Holcim, could this inform your sustainability-driven corporate financing options in the future?**

**RP:** At Holcim we work closely with the finance team to think about corporate financing incentives and related key performance indicators (KPIs). We think the finance team should work hand-in-hand with the sustainability team. Financial KPIs should have the same importance as sustainability KPIs. Working with investors and issuing sustainability-related bonds is one of the ways forward on that.

**EF: What are your thoughts on the pledges made at the most recent COP15 and how will Holcim react or adapt?**

**RP:** We had previously signed the pledge with the global coalition Business for Nature to make nature-related disclosures mandatory. We believe that voluntary is not enough. If we want to reverse nature loss by 2030, we need to start assessing impacts and dependencies and disclose this sooner rather than later.

While the mandatory wording did not make it into the Global Biodiversity Framework, I think what we have is good to make a start. For example, in Target 15, large companies and financial institutions are encouraged to disclose their impacts and dependencies on nature. We think this will push companies and financial institutions to act. I am therefore optimistic that more business are going to start assessing and disclosing their impacts and dependences on nature this year. ■

# Crediting nature

Verra’s director of sustainable development innovation **Sinclair Vincent** discusses a new nature crediting framework that the standards-setting body is developing. This new framework presents a critical innovation for driving investment toward nature and can support the recently adopted Kunming-Montreal Global Biodiversity Framework (GBF) goals and targets, Vincent tells *Environmental Finance*

**Environmental Finance:** Why is Verra developing a nature crediting framework?

**Sinclair Vincent:** We know that there are many high-quality conservation efforts that lack adequate funding. Nature-based carbon projects play an important role in addressing climate change and also deliver development benefits, including nature restoration and conservation. Yet, many of the services that landscapes provide beyond sequestering carbon have no clear direct monetisation pathway.

In addition, there are some land-based conservation activities that are not additional when it comes to carbon but desperately need finance to restore or maintain nature and biodiversity.

On the demand side, financial institutions, companies, and investors don’t have a structured or auditable way to invest in nature.

By creating a globally scalable nature crediting framework, we can address both of those challenges. The nature crediting framework will drive finance towards critical nature conservation and restoration activities. It will include methods for verifiably quantifying benefits to nature or biodiversity achieved by projects using the framework. This will then generate nature credits that companies and investors on the demand side can buy.

Verra uses the term “nature credit” rather than “biodiversity credit” because biodiversity is just one component of nature, and our framework will not exclusively focus on biodiversity.

**EF:** How is biodiversity developing as an asset class as opposed to being claimed as a development benefit of carbon credits?

**SV:** Carbon credits – quantified in tonnes of CO<sub>2</sub>e – do not fully account for nature, so it is important to have a new asset class. Nature credits will allow projects to verify the nature or biodiversity benefits of their activities in addition to, or separate from, carbon.

A separate asset class could also make it easier for companies to invest in nature-positive projects that relate more closely to their supply chains.

**EF:** How do you distinguish between a biodiversity offset and a nature credit?

**SV:** With biodiversity offsets, companies invest in like-for-like outcomes to compensate for negative biodiversity impacts. Since biodiversity is not fungible globally, offsetting schemes tend to be local.

Nature credits are not meant to be used to compensate for



Sinclair Vincent

negative impact. Instead, they can be used to invest in nature-positive outcomes. A company’s footprint should still be considered when investing in nature credits. For example, a mining company likely wants to invest in ecosystems where negative impacts might occur due to their operation.

We recognise that nature is not fungible. However, nature credits need to be defined in a way that makes them fungible enough for the market to function.

The GBF text includes both biodiversity offsets and biodiversity credits as examples of innovative financing schemes that could help implement national biodiversity strategies and action plans. Clear guidance on what claims can be made about nature credits will be essential.

**EF:** What market infrastructure needs to develop for investors or companies to make nature-positive investments using nature credits?

**SV:** The business case and claims that can be made upon the purchase and retirement of nature credits must be clearly defined and linked to the metrics outlined by the Taskforce on Nature-related Financial Disclosures (TNFD) and the Science Based Targets Network (SBTN).



Nick Hall

Valdivian Coastal Reserve project, Chile



Mark Godfrey

This will allow companies to understand how these investments fit into their biodiversity risks, impacts, dependencies, and nature-positive commitments.

We also need reliable and transparent tracking systems, such as the registry that Verra already maintains. It is critical to ensure that the proceeds from the sale of these credits make it back to the communities implementing or impacted by the projects. Draft protocols are already calling for 60% of proceeds from each transaction to go to the communities in project areas. That could mean using new tools on top of rigorous monitoring requirements and an existing registry infrastructure.

Another important component will be minimising the cost of project development and operation. One solution is to utilise innovations in monitoring systems. For example, biodiversity data firm NatureMetrics has developed an easy-to-use and accessible e-DNA monitoring tool that enables local communities to gather samples from water and soil to identify which species live in a given area.

**EF: How will this work propel the GBF targets forward?**

**SV:** Nature crediting would help achieve the ‘30 by 30’ target by scaling up finance for nature-positive activities globally and helping countries meet their biodiversity goals and targets. Credits could also help signal which landscapes or components of biodiversity might be more valuable or critical to protect.

Target 15 encourages large companies and financial institutions to assess and disclose risks, dependencies, and impacts on biodiversity. Nature credits can help companies go beyond mitigating negative impacts and investing in nature-positive outcomes.

Target 19 calls for a substantial increase in public and private financial resources to fund national biodiversity initiatives, including through innovative schemes such as biodiversity offsets and credits.

**EF: How are the supply and demand sides poised to take action on nature crediting?**

**SV:** The supply side is gearing up quickly. Many project developers have expressed interest in piloting the nature crediting framework - a huge supply-side signal.

Also, a number of data and tech providers are ramping up and working with early-stage projects.

On the demand side, there is heavy interest from the financial sector and investors. We’re also seeing companies getting involved in project development, especially in sectors that strongly depend

on land and natural resources.

We and others involved in this space will need to educate companies on how nature-positive investments can help secure long-term benefits rather than just mitigating negative impacts in the short term.

**EF: How can the market move toward these targets at the speed required with scalable standards and market credibility in mind?**

**SV:** It is exciting to see the interest, and we will need momentum as we dig into the technical questions. But we also need to follow proper standard and methodology development processes, including broad stakeholder engagement with local communities, companies, reporting agencies, and governments.

The inclusion of indigenous peoples and local communities in both the development and implementation of a credit mechanism like this is crucial as they maintain many lands that will be eligible for these credits. It won’t work without equity and inclusion.

Public consultations, piloting, and testing of the methodologies that we develop are also critical.

Other questions to resolve include what claims companies can make on the back of purchasing credits, as well as how we define a credit and address additionality.

Verra, along with several leading conservation organisations, will address all these aspects in the development of the nature crediting framework, the first version of which we expect to release at the end of 2023.

**EF: What can you learn from Verra’s Verified Carbon Standard Program (VCS) when developing a nature crediting framework?**

**SV:** There are a few things that we need to get right early on. But, just as with the VCS Program, we will also need to learn by doing and iterating. Technology will evolve, data will improve, and we will learn from pilot and early-stage projects.

We are also cautious not to let ‘perfect’ be the enemy of good. We need to innovate and finance these activities as quickly as possible.

Verra is an experienced standards-setter for climate action and sustainable development. We know who we need to engage with and the level of rigour required. We just need to make that happen in a short timeframe. The energy is there, and Verra is well-positioned to do this. ■

For more information, see: [verra.org](https://verra.org)

# COP15: Agreement on nature-related disclosures hailed by investors

Investors welcomed agreement by countries on a text to halt and reverse the loss of nature, which sets a goal to require financial institutions and companies to disclose their nature-related impacts and dependencies. **Michael Hurley reports**

**T**he deal hammered out at the COP15 conference in Montreal includes agreement on protecting 30% of land and sea by 2030, halving food waste, reforming \$500 billion of environmentally damaging subsidies as well as the commitment of \$200 billion a year in domestic and international biodiversity-related funding from public and private sources.

Pressure group Campaign for Nature welcomed the ‘30 by 30’ target as “the largest land and ocean conservation commitment in history”.

Canada’s environment minister Steven Guilbeault, who was hosting the conference, likened the significance of the deal for nature to that of the 2015 Paris agreement on climate.

The Montreal-Kunming Global Biodiversity Framework (GBF) was driven through by technical lead negotiator China after delays and a hastily rearranged COP15 conference after disruption caused by Covid-19. However, several countries in Africa said it was pushed through despite their objections, which included that the deal provide more funding for conservation to these countries.

It followed a fortnight of negotiations, which investor groups had billed as an opportunity to agree a nature equivalent to the Paris agreement.

However, the term ‘nature positive’ was not included in the agreement. Many financial institution observers had hoped it would be in the text and provide a rough equivalent to ‘net zero’ that could be used as an overarching target for investments.

It did include a requirement that large and transnational companies and financial institutions disclose their risks, dependencies and impacts on biodiversity through their operations, supply and value chains and portfolios.

Financial institutions are understood to have attended the conference in unprecedented numbers as the issue of private finance’s role in protecting biodiversity rose up the agenda in recent years.

Suresh Weerasinghe, head of levelling up & investments at Aviva, told *Environmental Finance*: “It’s great to see the GBF agreed this morning. In particular, that all financial flows – private and public



– will need to be aligned with the framework and that large and transnational companies will need to disclose their impacts and dependencies on nature, including supply chains.

“It’s a positive outcome and one we hope will start to undo some of the damage done to nature,” added Weerasinghe, who is also chair of the Finance for Biodiversity Foundation Advisory Board.

Sonya Likhtman, a manager at Federated Hermes and co-chair of the public policy advocacy working group of the Finance for Biodiversity Foundation, said: “We welcome the adoption of the Kunming-Montreal Global Biodiversity Framework as a meaningful step towards reversing biodiversity loss and restoring nature. It sends a clear, strong message to all stakeholders, including the financial sector.

“Goal D requires the alignment of financial flows with both



Tanja Havemann, Clarmondial

the 2030 targets and the 2050 vision, securing a focus on implementation in the short, medium and long term. This goal, along with several targets that reference private financial flows, provide the hook required to stimulate and scale up action from the financial sector.”

Likhtman said she was pleased by the disclosures requirement, and added that these parts of the framework “closely reflect the position we have advocated for through the Finance for Biodiversity Foundation ... All eyes must now turn towards implementation at the national level and across all sectors of the economy”.

Tanja Havemann, founder and director of agriculture and forestry investment manager and advisory Clarmondial, said agreement on the GBF and its 23 targets, and the commitment to a GBF Fund managed by the Global Environment Facility, “is such a meaningful signal”.

Asked whether the Montreal agreement should be considered the equivalent to the Paris agreement for climate, and whether the absence of the term ‘nature positive’ in the agreement is an impediment, Havemann said: “I am not sure it is helpful to compare, to be honest. Discussions on finance mobilisation and market mechanisms have a much longer history under UNFCCC [for climate] than under CBD.

“I think this outcome was the best that could be hoped for, as it provides the signal that the global finance & investment community was looking for.

“The term ‘nature positive’ is already becoming quite contentious, with groups interpreting it in different ways, so I don’t think it is an impediment that this specific term was not included.”

Gautier Queru, Land Degradation Neutrality Fund project manager at Mirova, said: “We are feeling rather positive about the outcome of the negotiations, although we would have preferred more ambitious and quantitative objectives. Nevertheless, having this clear framework now will establish the design of the architecture of our indicators and methodologies on a solid foundation.”

On the target relating to disclosures by companies and financial

institutions, Queru said: “Even if the final text does not provide mandatory disclosure by companies, the wording is robust and in line with the work from Taskforce on Nature-related Financial Disclosures (TNFD).”

Ingrid Kukuljan, head of impact and sustainable investing at Federated Hermes, and manager of a listed equities biodiversity fund, said the requirement should increase private investment in nature.

The 23 targets in the text include promoting private and blended finance, “and encouraging the private sector to invest in biodiversity, including through impact funds and other instruments”, as well as schemes such as “payment for ecosystem services, green bonds, biodiversity offsets and credits, benefit-sharing mechanisms, with environmental and social safeguards”.

Mirova’s Queru added: “Here both references to impact funds and innovative schemes such as biodiversity credits are very encouraging and confirm that what Mirova has developed for the past seven years in the field of natural capital investing is deemed relevant and useful. It is an incentive for us to do more, and will only encourage us to accelerate.”

The extent to which aspects such as disclosures have an impact is set to depend on implementation at national level, but countries will be required to provide, at least every five years, updates on their progress in the form of national biodiversity plans – like the nationally determined contributions parties to the climate agreement provide.

Headline indicators include the percent of land and seas conserved and the number of companies disclosing their impacts and dependencies on biodiversity.

The CBD will provide global trend and progress reports. ■

### More reaction to the agreement:

Eva Zabey, executive director of Business for Nature, said: “Businesses have been calling for a ‘Paris moment’ for nature. Today, governments have agreed to require large companies to assess and disclose their impacts, and in doing so, are more explicit about what they expect from business on nature than the Paris Agreement is on climate.

“The GBF is a wake-up call for businesses and financial institutions. Those not already assessing and disclosing their risks, impacts and dependencies, will need to get ready.”

Brian O’Donnell, director of the Campaign for Nature, said ocean conservation, “which has historically lagged behind land conservation, will now be an equal priority”.

He said governments must be held to account on implementing the agreement.

Arthur Campredon, a negotiator for the European Commission, said: “As of today, each and every country that is part of the CBD will have to set up an assessment and disclosure framework for companies and financial institutions related to risks, impacts and dependencies on biodiversity. This specific requirement will keep the momentum around biodiversity and accelerate it exponentially.”

Katie Leach, head of biodiversity at responsible investment NGO ShareAction, welcomed the agreement as an important step towards saving nature.

“However, vague wording and non-specific targets in parts of the agreement could undermine the urgent action that’s needed to protect threatened wildlife and ecosystems,” she said, adding that the framework will be judged by implementation and how targets are interpreted at a national level.

Governments should make nature-related disclosures mandatory and call for implementation in line with the TNFD, she said.

# The role of investors in reversing deforestation

Commodity-driven deforestation poses significant risks to companies and their investors, write Ingrid Kukuljan and Sonya Likhtman

The importance of the Amazon rainforest in tackling climate change and biodiversity loss is widely acknowledged. Forests absorb carbon dioxide from the atmosphere, providing a valuable carbon store. They produce oxygen during photosynthesis, which is why the Amazon rainforest is often referred to as ‘the lungs of the planet’.<sup>1</sup> It is one of the most biodiverse ecosystems on Earth, providing abundant ecosystem services that sustain our economies and societies.

Biodiversity is intrinsically linked to the biological, chemical, and physical processes that underpin all life on Earth. The Amazon rainforest represents nearly a third of all the tropical rainforest remaining on Earth. It is the habitat for approximately 10% of known species on Earth, though the figure is likely to be higher as many species are still being discovered.<sup>2</sup> It also plays an important role in regulating local and global precipitation patterns, with 20 billion tonnes of water released from trees into the air every day.<sup>3</sup>

## Deforestation and biodiversity loss in the Amazon rainforest

Clearing and burning the Amazon rainforest destroys vital habitats and releases carbon dioxide back into the atmosphere. Despite the immense value of the Amazon rainforest, deforestation has continued and increased in recent years under the Bolsonaro government in Brazil, in part due to the weakening of policies and limited law enforcement.<sup>4</sup> Alarming research shows that large ecosystems, such as the Amazon rainforest, may collapse quickly once critical tipping points are reached.<sup>5</sup>

The challenge of measuring biodiversity is frequently raised. The Natural History Museum (NHM) in London has developed the Biodiversity Intactness Index (BII) using the most comprehensive evidence base of its kind, alongside robust, peer-reviewed methodology.<sup>6</sup>

The BII contains a sample of 58,000 species across birds, mammals, plants, fungi and insects, which have been mapped in around 46,000 locations around the world.

BII is an indicator of the ‘health’ of nature, with a value between 0% and 100%. A BII value of 100% is what we would expect to see if an area has not been impacted by humans. Though 100% is not always a suitable or realistic target, it helps to put existing BII

values into context and inform decisions.

The NHM can project how the BII is likely to change in response to future management decisions, which can help companies evaluate the effectiveness of different interventions and strategies.

Researchers have suggested that if the BII of an area falls to below 90%, it is below what is considered a safe space for humanity within the planetary boundaries concept.<sup>7</sup> Crossing this boundary increases the risk that the area and ecosystem can no longer be relied upon to provide key ecosystem services such as clean air and water, food, and fuel.

In these cases, substantial human intervention may be needed to restore the resilience of the ecosystem, once again.

## Risks of deforestation

Commodity-driven deforestation poses the following significant risks to companies and their investors.

- 1. Reputational risk:** Companies found to be contributing to deforestation face significant reputational risks. For instance, supermarkets in the UK have continuously faced pressure from consumers, NGOs and investors to address deforestation in animal feed supply chains. In some cases, they responded by ending relationships with suppliers that had links to deforestation in the Amazon rainforest.<sup>8</sup>
- 2. Regulatory risk:** Regulation related to deforestation is increasing, especially within the EU and the UK. Proposed regulation in the EU9 would require commodities placed in the EU market to be deforestation-free, produced in accordance with laws in the country of origin, and covered by a due diligence statement. In the UK, following the Environment Act 2021, large companies that source commodities will be expected to conduct due diligence to ensure their products are free from illegal deforestation and conversion.
- 3. Physical risk:** Deforestation exacerbates climate change and biodiversity loss, causing more frequent and severe physical climate change impacts and creating risks to the provision of ecosystem services such as water and climate regulation. In addition, many companies are dependent on products derived from the Amazon rainforest, such as for pharmaceuticals or cosmetic products. Destruction of the Amazon rainforest may



Ingrid Kukuljan



Sonya Likhtman

jeopardise the availability of nature-based inputs to businesses over the short or long-term.

**4. Systemic risk:** Deforestation poses a systemic risk to the financial system and the global economy, in part through the physical risks mentioned above. The planetary boundaries framework highlights that transgressing any of the boundaries – but especially those for biodiversity loss and climate change – greatly increases the risk that the whole earth system will shift irrevocably away from the stable state that has characterised the last 11,000 years.<sup>9</sup>

#### The role of investors

Investors have a critical role to play in halting and reversing deforestation, especially through engagement with companies and capital allocation. Federated Hermes Limited signed the Commitment on Eliminating Agricultural Commodity-Driven Deforestation<sup>10</sup> ahead of COP26 in Glasgow.

The commitment focuses on increasing engagement to reduce

exposure to deforestation in portfolios. A collaborative initiative called Finance Sector Deforestation Action (FSDA) has been launched to support investors in delivering on this commitment.

We expect companies that source or produce soy, beef and leather, which are commonly linked to deforestation in the Amazon rainforest, to commit to deforestation by 2025, with 2030 as the latest possible cut-off date.<sup>11</sup>

The commitment should cover all commodities, regions, and suppliers, including indirect suppliers. We also encourage a commitment to full traceability of commodities to source, across all tiers of the supply chain, in order to demonstrate that the company's value chain is deforestation and conversion-free. ■

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For more information, see: [federatedhermes.com](https://federatedhermes.com)

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# Unlocking a net-zero world through reforestation and biodiversity investment

Rebecca Woods, ESG research analyst at the Church Commissioners for England, outlines how the investment body of the Church of England can leverage its portfolio and engage with others on the issue of biodiversity to effect change

**D**eforestation has long been recognised as a key threat to biodiversity, responsible for around 13% of global emissions, and is a huge contributor to habitat and biodiversity loss. Ending deforestation and implementing natural climate solutions could provide a third of the solution to achieving the Paris Agreement climate target, help halt and reverse biodiversity loss, and support human rights and food security.

The Church Commissioners has committed to utilising the potential of its portfolio, as well as engaging with others on the issue, to effect change in real terms across the economy.

Biodiversity presents a web of interconnected issues, but its complex nature can make biodiversity hard to tackle. Whether biodiversity should be divided into subtopics while being looked at by investors is debated.

Biodiversity can be separated into areas such as toxic pollution, plastics and deforestation. Even when looking at one subtopic, there are several ways to tackle it. Investors need to take a holistic look at their asset classes along with the impacts each class is having when considering the 'E' of ESG to solve this problem.

One way to reduce deforestation is through managing forests sustainably. This provides local employment and economic benefits, thereby helping prevent land use conversion. Sustainable production of timber, non-wood forest products, or monetising ecosystem services can be particularly impactful from both an environmental and social perspective. These activities also give rise to the timberland asset class, which can help channel institutional capital into nature-positive outcomes.

Responsible and sustainable forest management can be ensured and verified through global certification schemes such as the Forest Stewardship Council (FSC) or Sustainable Forestry Initiative (SFI), which should be applied together with local best management practices. This is in line with guidance from certifications such as the EU Taxonomy and the Climate Bonds Initiative on what can be considered 'green' timberland.

For this reason, whilst not all the forests that the Church Commissioners acquire are certified on acquisition, we make best efforts to ensure they are enrolled under appropriate certification standards as soon as possible. All the timber harvested from the



Rebecca Woods, Church Commissioners for England

Commissioners' forests is therefore certified as being sustainably produced – this includes 1.56 million tonnes of sustainable, renewable timber produced in the UK alone over the past decade.

Sustainable timber production involves replanting areas where trees have been felled, ensuring the harvested timber is a renewable resource. Over the past five years the Church Commissioners has planted in excess of 10 million trees, including doubling the area of native woodland across the Commissioners' forests in the UK in order to benefit biodiversity. The tree species for these native woodlands are selected based on their ecological suitability for a given site, and a mix of species is planted to increase habitat diversity. Although no substitute for avoided deforestation, reforestation and afforestation can be vital for biodiversity where loss of tree cover has already occurred.

Trees can also be planted on a smaller scale. The Church Commissioners plant trees on properties across our real asset portfolio. In 2021, 64 new trees were planted across the Church Commissioner's Hyde Park Estate, in inner city London, in six

different areas and 840m<sup>2</sup> of new planting took place in eight gardens across the Hyde Park Estate adding specialist perennial and annual wildflowers. This new planting gives spaces back to nature and reintroduces native species to the city.

However, land for agricultural use also has links to deforestation which present other challenges and requires careful management. There is an increased focus on how to maintain food production while increasing biodiversity, as biodiversity benefits food production, but there has to be a balance between the needs of humans for food production and the needs of the planet. Proper practices help protect the efficiency of crop production, to not only prevent any further deforestation, and provide potential for increased tree planting and biodiversity as part of a sustainable farming system.

To achieve this, there is a need for learning and sharing information and that view is embodied by the Church Commissioners' rural team.

The rural team work with tenants to learn and share details of sustainable farming practices, as well as use of crop rotations and appropriate soil management plans.

Land for agricultural use provides the potential for positive environmental work, but as the Church Commissioners' rural assets are managed through tenants, it is important to work with the tenants to increase biodiversity.

Due to this, the environmental credentials of incoming tenants have been an increasing focus of recent lettings. A requirement for a collaborative approach between tenant and landlord was included, with the landlord "seeking nature-based solutions, opportunity for biodiversity improvement and enhancement of soil health".

The tenancy details also specified that the Church Commissioners endeavours to attract tenants willing to accept and engage in natural capital and biodiversity or ecological assessments. This encourages regenerative farming practices across the Church Commissioners' land holdings. These are all indirect ways that biodiversity can be protected through deforestation.

Listed equity can also have links to deforestation. As most deforestation is driven by unsustainable production practices for palm oil, soy, cattle products and pulp and paper, action on these commodities is particularly urgent. That is why more than 35 leading financial institutions, representing over \$8.9 trillion in assets under management (AUM), including the Church Commissioners, announced at COP26 a commitment to tackle agricultural commodity-driven deforestation as part of broader efforts to drive the global shift towards sustainable production and nature-based solutions.

The commitment – to use best efforts to eliminate agricultural commodity-driven tropical deforestation from portfolios by 2025 – was a response from the finance sector to the COP26 Call for Climate Action Announcements from Private Finance Institutions, issued by the COP26 Presidency, Mark Carney's COP26 Private Finance Hub and the High-Level Climate Action Champions.

Exposure to deforestation through companies' operations or supply chains poses significant regulatory and reputational risks, not to mention the longer-term systemic risks driven by the physical impacts that stem from forest loss. This makes the issue



increasingly important for investors and companies.

In 2020, the Commissioners helped found the Investor Policy Dialogue on Deforestation (IPDD), a collective of investors with \$10 trillion in AUM that aims to engage with public agencies and industry associations to promote sustainable land use, forest management and respect for human rights.

The approach of IPDD, on whose Steering Committee we sit, is to build long-term relationships with key stakeholders to highlight the risks that deforestation poses to societies and economic growth as well as to our portfolios. By encouraging the adoption and implementation of regulatory frameworks that ensure the protection of such natural assets and human rights, the Commissioners hope to bring about positive environmental and social outcomes as well as protect the value of the holdings in these countries from physical, regulatory, and reputational risks.

As of December 2021, IPDD was supported by 57 global institutional investors, from 18 countries. The coalition is currently engaging with the Brazilian and Indonesian Governments on deforestation, both of which rely upon so-called "avoided tropical deforestation" as the core component of their Nationally Determined Contributions to the Paris Agreement (NDCs).

The initiative is supported by the Secretariat of the Tropical Forest Alliance of the World Economic Forum. The group has held successful meetings with politicians, policymakers, and ambassadors about deforestation in both Brazil and Indonesia (the Commissioners co-chairs the IPDD's Indonesia workstream). The IPDD encouraged enhanced ambition in the NDCs in advance of the COP26 meeting, as well as support of domestic policy which implements this.

Biodiversity is a complex topic, and but one that investors can join together to help solve, while protecting the planet and supporting the transition to a net-zero world. Preventing deforestation is one of the key ways to do this and itself can be tackled in several ways. ■

# Putting a price on the priceless

Quantifying Nature is developing a platform that will enable companies and investors to understand their assets' value at risk from degrading nature. Its CEO **Adrien Firmenich** and head of biodiversity **Minerva Singh** explain

**Environmental Finance:** What do you see as the critical challenge facing investors and companies in understanding the financial implications of biodiversity loss?

**Minerva Singh:** There are three key reasons why investors and companies need help to fully understand the financial implications of biodiversity loss: lack of supply chain transparency; the absence of a single overarching climate-nature disclosure framework and valuation methodology; and an overabundance of often unstandardised biodiversity metrics.

Biodiversity impact analyses have traditionally been conducted at large, sub-national spatial scales. However, investors need clear visibility into the supply chains of the companies they have invested in: they need easy-to-understand and straight-to-the-point monetary value information that represents the extent to which each company asset is affected by nature loss.

The second and third challenges are starting to be addressed by the work of the Taskforce for Nature-related Financial Disclosures (TNFD) and of the Task Force for Climate-related Financial Disclosures (TCFD). This work can be harnessed to make the disclosure process more straightforward. This common-ground framework can be complemented with the IPBES [The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services] methodology to value ecosystem services and the statistical natural capital accounting methodology to yield standardised, easy-to-understand metrics that investors can integrate into a wide range of scenarios.

**EF:** What approach have you taken at Quantifying Nature to address these challenges?

**MS:** We need to fully understand, identify and quantify the financial implications of biodiversity loss. Compared with climate change, biodiversity is more complex. One approach is determining the value and impact of every living entity on Earth within a highly complex intertwined system. The second is to take a more pragmatic and linear approach, as with climate change, even though it will only partially represent our dependencies and impacts on nature.

We chose the second approach. We have been assessing the implications of biodiversity loss by looking first at the most apparent cause-and-effect scenarios – such as deforestation loss on hydropower energy generation or the impact of fertilisers on the reduced output of certain crops, which is partly due to the decline of pollinators. This seemingly simplistic approach has allowed us to start generating economic values of biodiversity loss. Our ultimate objective is to render our software-as-a-service capable of generating biodiversity insights for any desired financial risk parameter at any location on Earth.

This requires bridging data and information, which we are working towards through our consulting business, enabling us to work on many fascinating projects. For instance, we are currently studying the vulnerability of Mexico's tequila industry to climate and biodiversity change.

Tequila production represents around 1.25% of Mexico's agricultural GDP. Tequila is made from blue agave. Blue agave requires the pollination services of three threatened bat species: the lesser long-nosed bat, greater long-nosed bat, and Mexican long-tongued bat.

Our in-house analysis identified critical areas where bat repopulation efforts would yield the most benefit in blue agave pollination and hence tequila production. We then mapped these areas' spatial change through time and different climate scenarios, enabling tequila producers to adapt to climate change and biodiversity loss swiftly.

**EF:** What does the process involve?

**Adrien Firmenich:** The first step in Quantifying Nature's Earth Engineer quantifying process involves geolocating every factory, operation centre, warehouse etc., for any company of interest to the investor. Each asset is attributed an economic value based on the impact it has on the natural environment and the risk that nature loss and climate change pose to that asset. This asset-based approach gives the investor a 360-degree view of a company's entire supply chain. It identifies the assets prone to the most significant future financial losses from climate-nature loss.

This is communicated to our clients via financial losses and gains under different biodiversity change scenarios and timelines. Its beauty lies in its simplicity, and we quickly realised that interlinkages between apparently unrelated phenomics began to appear as we progressively quantified more elements. Assessing the second-degree cause-effect feedbacks of other biodiversity elements becomes possible.

We have based our valuation methodology on a combination of three of the most popular and robust nature and climate disclosure frameworks – the TNFD, the TCFD and those developed by Global Canopy – as well as elements of other frameworks to ensure it is as holistic as possible.

We want to create standardised financial risk metrics using a sound methodology stemming from a multi-stakeholder-approved framework, enabling our clients to complete their climate-nature disclosures quickly, accurately, and cost-effectively.

**EF:** What outputs will the platform offer its users?

**AF:** Quantifying Nature's Earth Engine platform offers a wide range of outputs to its users, which can be divided into four main



Minerva Singh

categories: economic losses due to climate impacts; economic losses that stem from biodiversity degradation; financial losses attributed to the collective and mutually reinforcing effect of climate change and biodiversity loss; and the double materiality natural accounting impacts.

The financial implications of climate change on companies can either be physical, due to events such as floods or typhoons, or transitional, due to external stressors from policy, such as increasing carbon taxes, especially around Scope 3 carbon emissions – those emissions generated as the result of activities indirectly generated in an organisation’s value chain – and rising energy prices.

Our platform also distinguishes the financial impacts of biodiversity losses from direct physical threats (e.g., dropping population levels of agave-pollinating bats in Mexico leading to decreased tequila production) or transitional dangers. Quantifying Nature also identifies the financial impacts that stem from the reputational damages that a company can incur from causing biodiversity loss (e.g., BP’s stock price going down after the Deepwater Horizon disaster).

Thirdly, our platform aims to simplify and introduce the concept of financial impacts caused by the combined effects of climate change and biodiversity loss. This is of primary importance, as you cannot have accurate climate change financial risk analytics without the concomitant integration of the biodiversity element and vice versa, given their mutually intertwined relationship. For example, without the protection afforded by forests, economic damage to infrastructure from flooding would, on average, be 30% greater worldwide.

The fourth output generated by our platform is non-financial disclosures, referred to as double materiality matrix values, which address both financial and global impact issues related to materiality. Our platform, integrated with the Global Reporting Initiative framework methodology, displays the double materiality impacts of biodiversity loss.

In short, the product offers its users granular insights into a company’s supply chains, asset-specific dependencies, and its impact on biodiversity loss and ecosystem degradation. The world needs more standardised, comparable biodiversity indicators and precise reporting mechanisms. Adopting a dual approach, integrating TCFD and TNFD criteria, will equip companies with



Adrien Firmenich

the tools for moving beyond net-zero emissions to nature positive.

The Finance for Biodiversity pledge saw 126 financial institutions with €18.8 trillion (\$19.8 trillion) in assets under management make a statement of intent to direct cash flows to meet biodiversity goals. This signifies a clear appetite for measuring the value of nature loss. Quantifying Nature’s proprietary platform is the secret sauce.

Users will be presented with a report directly linked to mandatory disclosures and those expected to be rolled out and come into force as early as next year. For example, our risk matrix score for deforestation alerts a given entity to the upstream and downstream impacts on operations in real time. As nascent biodiversity accounting mechanisms take shape and as nations come to grips with the new legislative landscape ushered in after the COP15 accord, Quantifying Nature is positioned to lead the charge.

**EF: I understand you are planning to launch the platform in June. What are the next steps in its development?**

**AF:** We are fortunate to be working closely with a strong network of asset managers and utility providers as we move to roll out a market-ready product this summer. Continuously improving the accuracy of our data is paramount, with ongoing advances under the watchful eye of key industry advisors.

Post-launch, we plan to rapidly scale to become the international gold standard for bespoke biodiversity metrics and automated disclosure while, at the same time, offering a tool that is accessible to large and small organisations. Rendering our service accessible to SMEs [small and medium-sized enterprises] is paramount, given their economic and environmental impacts and currently neglected value.

In the medium term, Quantifying Nature will explore linking company reporting and a transparent mode of achieving nature-positive outcomes via ‘bio credits’.

We also plan to keep a close eye on the evolution of the double materiality disclosing framework. Should the double materiality movement continue to gain strength, we will revisit our current framework and create financial risk metrics representing both financial and impact risks. ■

For more information, see: <https://quantifyingnature.com/>

# Biodiversity framework will aid NA100, TNFD, says Robeco

**T**he Global Biodiversity Framework agreed at COP15 will contribute to improved data for investors by dovetailing with investor initiatives on disclosures and engagement, according to an investment manager at Robeco.

Peter van der Werf, senior manager of engagement and executive director at Robeco, told *Environmental Finance*: “The global biodiversity framework is an important agreement that will require better reporting on biodiversity impacts, dependencies, risks and opportunities to businesses and financial institutions.”

He said Robeco and other investors are preparing to launch an initiative to require more action by investors to improve their impact on nature and will use the COP15 framework to benefit their work.

Van der Werf, who is a member of the advisory board of the Finance for Biodiversity foundation, said Target 15 of the Kunming-Montreal Global Biodiversity Framework was drafted to “capture that global ambition” to enhance reporting and data availability for public and private finance.

The text agrees that large and transnational companies and financial institutions should disclose their risks, dependencies and impacts on biodiversity throughout their operations, supply and value chains and portfolios.

“With the Taskforce on Nature-related Financial Disclosures (TNFD) using a similar conceptual framework for reporting, this aligns well,” van der Werf said.

Nonetheless, some investors said they were disappointed the text did not make reporting on such aspects mandatory. Instead, it will be up to the more than 190 countries to decide if and how they pursue a mandatory regime.

Van der Werf said investors pushing for more information will be helped by the global biodiversity framework.

“Robeco contributed to the launch of Nature Action 100 (NA100) at COP15 in Montreal and we will be requesting companies to start reporting in line with Target 15 and the new standard of the TNFD that will be ready for final publication in September 2023.

“With all these developments coming together, we are positive that the coming years we will see a lot of actionable data available for investors to incorporate in their investment decision making.”

Van der Werf has been a key figure in the launch of NA100, a nature-focused collaborative engagement initiative designed to improve on the approach of its climate equivalent, Climate Action 100+.

NA100 was ‘soft launched’ at COP15 and is due to be formally launched this year. It will target engagement with 100 ‘focus companies’ deemed to have the largest impact on nature, the names of which are set to be revealed in spring.



Peter van der Werf, Robeco

At *Environmental Finance*’s conference The Future of ESG Data 2022 in London in October, Eliza Mahdavy-Turcat, group head of ESG performance at Électricité de France (EDF) said reporting on biodiversity will be “a real challenge”

“The TNFD is still searching for the best way to disclose on nature, and nature is much more complex than climate,” Mahdavy-Turcat said.

The European Financial Reporting Advisory Group, which is developing draft criteria for European corporate sustainability reporting standards, [is expected to sign a cooperation agreement](#) to align these with the TNFD’s framework.

The other most challenging area of reporting for EDF is disclosing on aspects of its supply chain such as pollution, Mahdavy-Turcat said.

In another panel at the conference, representatives from BNP Paribas Asset Management and Axa Investment Managers said enough biodiversity-related data is available for investors to act now to reduce their nature risks.

The in-person conference highlighted the numerous challenges that are being addressed in the space, as related regulatory and market developments unfold at record pace. ■

*Reporting by Michael Hurley and Thomas Cox*

[A US chapter of The Future of ESG Data Conference will be held in Washington on 24 April 2023. The Future of ESG Data Conference 2023 will take place in London on 16 October 2023.](#)

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# Measuring the biodiversity footprint of a portfolio

**Elodie Milleret, Iceberg Data Lab’s lead biodiversity expert gives an overview of Iceberg’s Corporate Biodiversity Footprint (CBF) measurement tool**

## Why biodiversity matters

Biodiversity is essential to sustaining humanity, society and people through the provision of ecosystem services and nature’s multiple contributions. In its latest Global Assessment Report on Biodiversity and Ecosystem Services, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) identifies five main drivers of direct pressures responsible for biodiversity decline :

- Changes in land and sea use
- Direct exploitation of organisms and resources
- Climate change
- Pollutions
- Invasive species

Additional to those direct drivers, indirect drivers, such as socio-economic and demographic trends, are also playing a major role in influencing direct drivers of biodiversity and ecosystem changes, as well as strongly influencing other indirect drivers.

Of the global limits set by the Stockholm Resilience Centre for the nine planetary processes essential to sustain human life on Earth, already six have been exceeded (see Figure 1) such as pollutants or land system change. Of these, the global biodiversity limit has been exceeded the most.

## How to measure Corporate Biodiversity Footprint

Iceberg Data Lab (IDL) has developed a Corporate Biodiversity Footprint (CBF) measurement tool which assesses biodiversity footprinting using the metric of Mean Species Abundance (MSA). The MSA is the commonly used and scientifically recognised by international parties (IPCC, IPBES, etc.).

The CBF assesses the most material pressures on terrestrial biodiversity shown in Figure 2.

The CBF models the impact of corporates on biodiversity through four main environmental pressures on species and habitats:

- Change of land use: with occupational, transformational, incremental, encroachment and fragmentation impacts;
- Climate change due to greenhouse gases emissions (GHG emissions);
- Air pollution: leading to the ecosystems’ disturbance due to terrestrial eutrophication and acidification (Nitrogen and Sulphur emissions respectively); and
- Water pollution: freshwater ecotoxicity with the release of toxic compounds in the environment and plastic entanglement.

These pressures are calculated along the whole value chain of the corporate, appraising their processes, products, and supply chains. All pressures are aggregated into Scope 1, 2 and 3 (upstream and downstream) according to the definitions and boundaries set

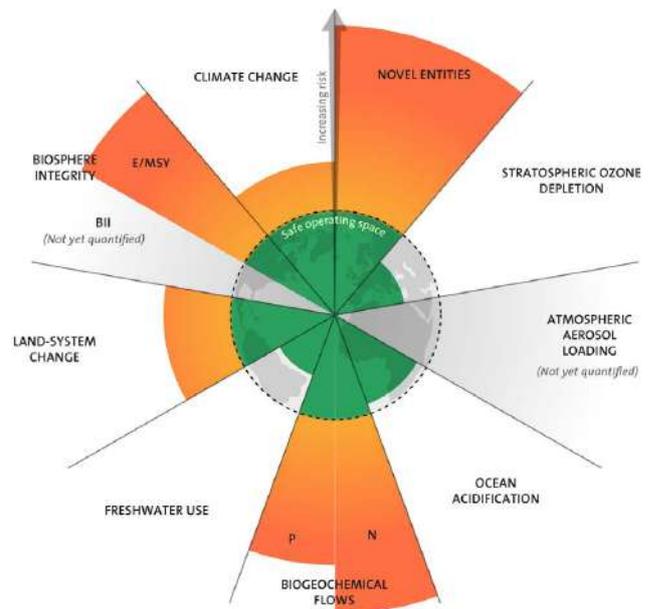


Figure 1: Illustration of the planetary limits for the nine Earth system processes that are essential for maintaining favourable conditions for human development (Rockström et al., 2022). Biodiversity limits measured as part of the Biosphere integrity with the Biodiversity Intactness Index (BII) and extinctions per million species-years (E/MSY).

forthw in the GHG Protocol.

Finally, the CBF provides a score that is expressed in the unit of  $\text{km}^2.\text{MSA}$ .

## How to create Positive Impact

At this stage, the contribution to Positive Impact will be approached through three pillars:

- Reduction
- Avoidance
- Compensation

The “Reduced Impact” can be defined as the reduction of impact on biodiversity of a company or financial institution over time. The reduction can be calculated between two years for which analyses have been completed.

The “Avoided Impact” is defined as the impact on biodiversity that a company or financial institution will have avoided over time compared to a baseline scenario established for the biodiversity

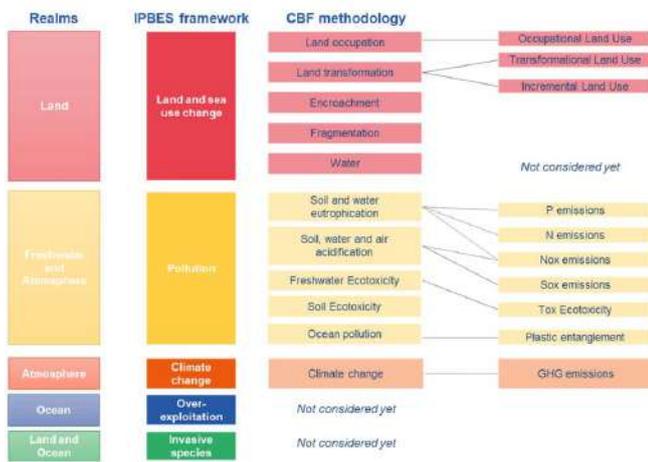


Figure 2: Pressures and sub-pressures on biodiversity considered in the CBF methodology and based on the five main drivers identified by Ipbes (2019). We partially cover marine biodiversity through the pressure of plastic entanglement related to marine species only. This pressure is part of the main pressure “Water Pollution”.

and for each main sector. The biodiversity scenarios are under development.

The “Compensated Impact” will be approached through the positive land transformation (restauration, rehabilitation of lands, etc.).

### How to assess the Dependency

The dependency of an economic sector to an ecosystem service illustrates how that sector can take advantage of the given service and how disruption of the service might negatively impact the economic sector.

IDL recently developed the Dependency Score derived from the ENCORE tool. Based on 26 ecosystem services (regulating, provisioning and cultural), IDL provides three sub-scores for each type of ecosystem services and a final score aggregated at the company level. This approach allows companies and financial institutions to evaluate, measure and calculate their dependencies to ecosystem services for each sector.

### How to align with the regulations

#### Conference of the Parties 15 (Convention on Biological Diversity, CBD)

The Global Biodiversity Framework (GBF) that was adopted in Montreal includes four goals and 23 targets. Target 15 requires companies and financial institutions to monitor, assess and disclose their risks, impacts (positive and negative) and dependencies on biodiversity all along their operations, supply chains and portfolios.

From a regulatory perspective, the CBF provides an analysis of the contribution to the reduction of the main pressures and impacts on biodiversity identified by the Ipbes.

The CBF largely meets the objectives of the CBD (first adopted in 1992). Expressed in  $-Km^2.MSA$ , it is a quantitative metric, comprehensible by non-experts which reflects the ecosystem

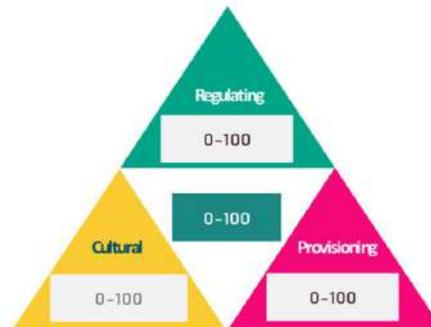


Figure 3: Sub-scores of ecosystem services in the IDL Dependencies Score methodology. It illustrates the score from 0 to 100 for each category of ecosystem services and for the final aggregated score.

condition and allows users to account for stocks and variation of stocks of biodiversity through the MSA.

#### Taskforce on Nature-related Financial Disclosures (TNFD)

IDL is a forum member of the TNFD. Following the working groups of the TNFD, IDL is currently conducting pilot testing of the beta TNFD framework and the LEAP-FI and V-Process approach with the CBF and in partnership with some financial institutions. Our biodiversity measurement approach uses metrics and indicators as recommended in the TNFD guide.

The CBF could be used for impact metrics (in an absolute value) and measuring impact drivers such as change of land-use or pollution. The CBF can also give indicators in a relative value (per €Million). This would help companies and investors to evaluate their impacts and dependencies on nature.

The two phases “Evaluate” (LEAP-FI) and Assess & Prioritize (V-Process) all for the following to be assessed:

- Prioritisation of key activities, pressures and locations which encompass the entire value chain, select impacts and dependencies according to materiality, extent, and links with high-risk ecosystems.
- The assessment/evaluation of impacts and dependencies as a prerequisite to identifying subsequent nature-related risks and opportunities.

#### Article 29 of the French law

The CBF complies with the Article 29 of the French law on Energy and Climate.

The CBF metric is carried out in a bottom-up manner. Absolute and relative impacts (demonstrated with financial indicators) enable peer comparisons to be made. It covers the whole value chain (Scope 1, 2 & 3, upstream & downstream) and the four main environmental pressures (Land Use, Water Pollution, Climate Change and Air Pollution).

Using a comparative measurement approach allows users to implement “best in class” or “best-in-universe” approaches as well as positive or negative screenings. The CBF also allows financial institutions to integrate their impact on biodiversity in their strategies and decision-making processes with a science-based approach. In 2022, some major financial institutions (BNP Paribas Asset Management and Axa IM) used the CBF for measuring and reporting their negative impacts on biodiversity as part of their “Article 29” reports. ■

For more information, see: [icebergdatalab.com](https://icebergdatalab.com), or [contact@icebergdatalab.com](mailto:contact@icebergdatalab.com)

# COP15 grows ‘finance for nature’ momentum

Rapid momentum behind managing and disclosing nature-related risks has emerged in the wake of COP15, writes Makoto Haraguchi, TNFD dedicated senior vice president at MS&AD Insurance Group Holdings and TNFD taskforce member

In the Kunming-Montreal Global Biodiversity Framework (GBF), which was adopted at the UN Biodiversity Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) in December 2022, Target 15 decided that parties should take legal, administrative or policy measures to encourage and enable business and financial institutions to regularly monitor, assess, and disclose their risks, dependencies and impacts on biodiversity along their operations, supply and value chains and portfolios.

With COP15 postponed due to Covid-19, the CBD was able to respond to the submissions over the past four years from the business and financial community, including the Taskforce on Nature-related Financial Disclosures (TNFD), and to make the GBF targets clear and robust enough to enable the business and finance sectors to get started on managing and disclosing nature-related risks.

Target 15 appears to align with TNFD beta v0.3, released in November 2022. V0.3 expanded the draft disclosure recommendations to incorporate dependencies and impacts on nature, as well as the previous draft guidance relating to disclosures on risks and opportunities to an organisation and proposed a new disclosure recommendation related to supply chain traceability.

COP8 decisions in 2006 noted that the private sector was arguably the least engaged of all stakeholders in the implementation of the Convention, yet the daily activities of business and industry had major impacts on biodiversity and that guidance on the integration of biodiversity considerations into existing voluntary or mandatory reporting might be of use.

Subsequently, the CBD launched the Global Partnership for Business and Biodiversity (GPBB) in 2012 as a focal point for the business sector. It facilitated the development of various national and regional business and biodiversity initiatives.

This succeeded in raising awareness of the importance of biodiversity among publicly listed and large companies and encouraging them to take some biodiversity-conscious actions. However, this partnership did not lead to progress in analysing the impacts, dependencies, opportunities and risks of individual sectors or developing reporting and disclosure standards.

COP14 in 2018 might have been a turning point when the CBD invited the World Economic Forum, the World Business Council



Makoto Haraguchi, MS&AD

for Sustainable Development, and other environmental, social and governance (ESG) market-related institutions as an observer for the Business and Biodiversity Forum. There, the importance of engaging private financial institutions (FIs), as well as business corporates, was reaffirmed.

A year later, the 9th meeting of GPBB and the European Business and Nature Summit were held at the same time in Madrid, where several people had already begun to speak out about the possibility of developing a ‘TNFD’ following the ‘success’ of the Taskforce on Climate-related Financial Disclosures (TCFD) approach; its climate-related equivalent.

## Public-private partnerships in target setting

TNFD v0.2, released in June 2022, laid out considerations for setting nature-related targets.

There is demand from market participants for the TNFD framework to help with target setting and with achieving corporate targets aligned with broader national and global public policy goals such as the GBF.



[The Kunming-Montreal 2030 Global Targets](#) are both national and planetary in scope. Therefore, they must be assessed at the national and local level so that corporates and FIs can use them for target setting and performance monitoring.

For example, the Ministry of the Environment (MOE) Japan has implemented public-private partnership policy measures to contribute to achieving Target 3. The G7 countries have already committed to the '30 by 30' target at the G7 Summit held in June 2021 (the G7 2030 Nature Compact).

Responding to the Compact, MOE established the 30 by 30 Roadmap in April 2022, which outlines necessary actions to meet the 30 by 30 target, including the expansion of protected areas and improving its management quality, certification and management of OECMs (Other Effective area-based Conservation Measures), development of an interactive mapping that visualises important areas for biodiversity conservation, and the effects of conservation activities within each area.

Such information will help corporates and FIs to set their targets in their priority locations. In addition, the Roadmap highlights the importance of public-private partnerships, one of which is the 30by30 Alliance for Biodiversity.

The Alliance aims to promote the measures embodied in the Roadmap effectively. It comprises of 21 core organisations from industries, the private sector, and governments, including MOE. As of 30 December 2022, 182 corporates and FIs, 34 local governments, and 92 not-for-profits have joined, and the number is growing.

Members who are also landowners have committed to certifying their lands as OECMs or expanding protected areas within their lands. Local governments will also incorporate their contributions to the 30 by 30 target in their Local Biodiversity Strategies and Action Plans.

#### Collective action for a nature-positive transition

One gentleman in the heavy industry sector asked me a question: "As opposed to sectors like the food industry, does our sector have to deal with the TNFD framework as an issuer when we don't know the causal relationship with nature or the quantitative impacts and risks?"

I told him that semiconductors, in short supply in the industrial

sector worldwide, require large amounts of clean water during production, which is why Taiwan has had to stop supplying water to rice farmers. As the "communication, education, awareness and uptake" section of the GBF indicates, a flexible communication approach is essential such as "targeted communication, adapting the language used, level of complexity and thematic content to relevant groups of actors".

The new chip plant invested by a Taiwan semiconductor company started construction in Kumamoto prefecture, Japan. The area depends on groundwater for 80% of its drinking water and 100% of the drinking water used in Kumamoto City, the prefectural capital, with a population of approximately 740,000. The Kumamoto area is known for its high recharge capacity, with one-third of it coming from rice paddy fields.

To maintain the quantity and quality of groundwater as a region's treasure, Kumamoto City and ten surrounding municipalities, together with local residents and private sector representatives, established and operate the Kumamoto Groundwater Foundation.

Companies that depend on the groundwater supply services provided by nature in the area should discuss with the foundation their contribution to maintaining the farmland and pastures in the groundwater recharge area by purchasing rice and other agricultural products or donation in proportion to their water withdrawals based on the scientific studies being conducted by the foundation.

This ambitious collective action platform will ensure that even if semiconductor production extracts large amounts of water, water for local residents and local agriculture production will be maintained, and the protection of endangered species that depend on spring water will be sustainable.

Rice paddies are a green infrastructure that acts like a dam to hold back extreme heavy rains caused by climate change and mitigate flooding. Sushi rice, enjoyed by tourists coming to Japan from all over the world, is made from rice and rice vinegar. Financing nature-based solutions also preserves the flow of the cultural service of Sushi.

As a property and casualty insurance company, the MS&AD Insurance Group is considering blended finance to support collective action for such nature-based solutions in collaboration with banks, including regional financial institutions and public development banks. ■

# Biodiversity in sustainable bonds – Insight from *Environmental Finance Data*

## Bonds with terrestrial and aquatic biodiversity conservation use of proceeds

According to EF data, in total there have been 368 bonds issued worth \$22 billion with ‘terrestrial and aquatic biodiversity conservation’; as a specific use of proceeds, which represents 2.5% of all sustainable bonds issued by the end of 2022.

The first bond with this use of proceeds was the Dutch entrepreneurial development bank FMO who issued a \$500m sustainability bond in 2013 with terrestrial and aquatic biodiversity conservation as one of the four use of proceeds listed with eligible projects including sustainable forestry and sustainable farming.

The most common bond label for bonds with terrestrial and aquatic biodiversity conservation use of proceeds was green (226 bonds – 72%) with the remainder labelled sustainability (102 bonds – 28%).

## Year-on-year issuance

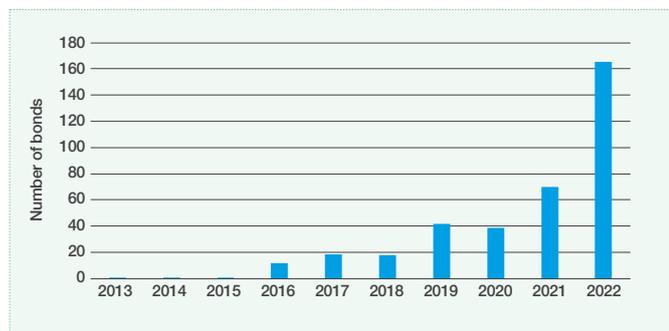


Figure 1 Source: Environmental Finance Data

Green and sustainability bonds issued with ‘terrestrial and aquatic biodiversity conservation’ use of proceeds grew substantially in 2022 with 165 bonds (45% of the total number of bonds with this use of proceed) compared with 70 in 2021. In 2022, sustainable bonds with this use of proceeds represented 5.3% of all sustainable bonds issued and 9.3% of all green and sustainability bonds.

## Issuer type

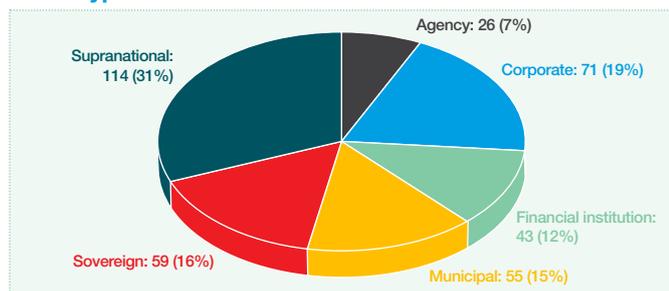


Figure 2 Source: Environmental Finance Data

Supranational issuers represent 7.4% of total sustainable bond issuance but dominate the issuance of bonds with ‘terrestrial and aquatic biodiversity conservation’ use of proceeds (31%) with a relatively even spread amongst corporates (19%), sovereigns (16%) and municipal (15%) issuers.

## Regions

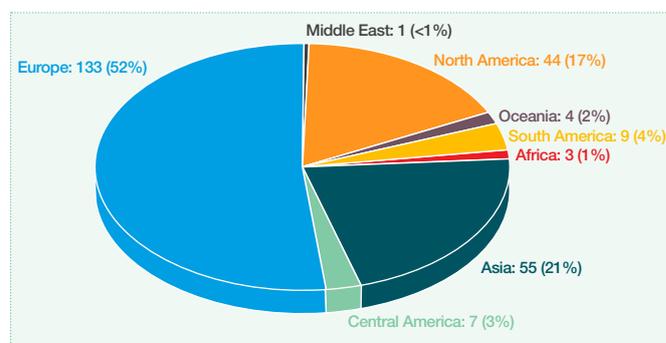


Figure 3 Source: Environmental Finance Data

European issuers represent just over half (52%) of all bonds with ‘terrestrial and aquatic biodiversity conservation’ use of proceeds with Asia (21%) and North America (17%) the other notable regions. This regional breakdown is broadly consistent with overall sustainable bond issuance.

## Sustainability-linked bonds with a biodiversity KPI

Biodiversity-related key performance indicators (KPIs) represent just over 1% of sustainability-linked bonds (SLBs). Only three SLBs have publicly set ‘biodiversity and conservation’ KPIs (Uruguay, Thai Union Group, and Klabin) for a total of \$2.2 billion – this is from a total market of 295 SLBs issued worth \$177.9 billion.

The most notable is the sovereign SLB issued by Uruguay in October 2022. The KPIs set ambitious biodiversity goals surrounding the maintenance of native forest and have step-ups and step-downs in the coupon rate related to specific biodiversity indicators.

## Loans

Sustainable loans are not commonly used to fund biodiversity projects at present. *Environmental Finance Data* has identified 11 green loans worth \$4.6 billion with ‘terrestrial and aquatic biodiversity conservation’ as a use of proceeds and 27 sustainability-lined loans worth \$15.5 billion with a ‘biodiversity and conservation KPI’ representing just over 2% of the publicised green and sustainability-linked loans. ■

Notes on the data:  
Unless otherwise stated the data covers inception of the green, social, sustainability and sustainability-linked labelled bond market up to 31/12/2022  
Use of proceeds information is ex-ante and based on point of issuance documentation stating the use of proceeds in line with the ICMA Green Bond Principles. Issuers self-select the specific use of proceeds  
All data is presented by number of bonds issued (not value)



# Environmental Finance Data

The most comprehensive source of information on green, social, sustainability bonds and loans.

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