



# Back to our roots: How responsible investors can help tackle the biodiversity crisis

- Climate and biodiversity are intertwined two systemic risk factors that drive each other
- Despite limitations on availability and consistency, there is still sufficient data for investors to act
- All industries are vulnerable to the risks of biodiversity loss, and all are part of the challenge
- Greater momentum is gathering around biodiversity as financial firms take more responsibility



**Liudmila Strakodonskaya,** AXA IM Responsible Investment Analyst

Human life and nature depend on a complex system of interactions between the environment and living organisms. It is utterly fundamental to our existence and deeply sensitive to our interventions – and yet we can sometimes lose sight of how reliant our economies are on biodiversity's careful preservation.

The oceans, forests, agricultural land and climate, as well as the plants and animals they support, are examples of the 'natural capital' at the heart of this – and they are under threat. We believe investors can and should address biodiversity risks in their portfolios, in pursuit of genuinely sustainable

economies. Our goal should be to identify how each economic activity can damage biodiversity, and to find solutions which can mitigate these negative impacts. Ultimately, we have the opportunity to build new 'nature-positive' economic models.<sup>1</sup>

<sup>1</sup> How business can use science to seize the opportunities of a nature-positive economy – Science Based Targets Network

This is a challenging ambition. It is often said that you cannot manage what you cannot measure and in biodiversity research, data and reliable analytical tools have been difficult to come by. But this is changing. We believe solutions are now emerging which offer investors the ability to start integrating biodiversity into core portfolio decision making.

The momentum will amplify this year as the pandemic-delayed United Nations Conference of the Parties on biodiversity (COP15) takes place in China. We have already seen the initial publication of the Taskforce on Nature-related Financial Disclosures' (TNFD) Beta framework, regarding biodiversity-related financial disclosure, and we will also see developments from the Science-based Targets Network (SBTN) on biodiversity target-setting by corporates in the near future.<sup>2</sup> In addition, one of the key investor-led organisations in the marketplace – the Finance for Biodiversity (FfB) foundation – plans

to issue guidance on approaches by financial institutions in 2022.<sup>3</sup>

Biodiversity loss is a systemic risk, tied inextricably to climate change and yet sometimes overlooked in the push for net zero emissions. We think the moment has arrived for investors to understand how they can be part of the solution, to assess how biodiversity risks might affect their investments, and to ensure they are not left behind.

### Scoping biodiversity: Investors may struggle to see the wood for the trees

This planet's stock of natural capital is the origin of all the benefits people and economies obtain from ecosystems. Air, soil, food, water, heat and health make human life possible. To preserve these ecosystem services, a balance must be maintained in terms of number, quality, and variety of natural assets globally. Biodiversity is the key indicator of this balance. It measures the variability among living organisms from all sources including terrestrial, marine and other ecosystems, and draws in ecological, species as well as genetic diversity. Measurement should allow us to assess

the degree of biodiversity loss which could be considered as a genuine risk for the survival of human societies as we know them.

The fact that biodiversity loss represents such a structural, existential risk can make it difficult for investors to develop a response. How can financial markets hope to head off such a global and fundamental threat? This can push investors to concentrate their efforts on single cases or specific topics – deforestation, and water consumption for example. Each of these issues is

extremely important for natural capital preservation and to build resilience into many human economic activities. However, we believe investors can benefit from a more holistic vision to tackling biodiversity loss, to echo the growing maturity in climate-aware strategies. To some extent, this is the goal of nature-focused initiatives (TNFD, FfB Foundation, SBTN and so on) representing a collective effort from investors, corporates and other stakeholders to mitigate biodiversity loss.

<sup>&</sup>lt;sup>2</sup> Welcome to the TNFD Nature-Related Risk & Opportunity Management and Disclosure Framework » TNFD

<sup>&</sup>lt;sup>3</sup> The guidance will be based on the results of the global Consultation conducted by FfB in December 2021.

<sup>&</sup>lt;sup>4</sup> Ecosystems and Human Well-being: Synthesis. Millennium Ecosystem Assessment, World Resources Institute. 2005

<sup>&</sup>lt;sup>5</sup> IUCN Glossary of Definitions. IUCN, May 2021.

Handbook of the Convention on Biological Diversity Including its Cartagena Protocol on Biosafety, 3rd edition. Secretariat of the Convention on Biological Diversity. 2005.

<sup>&</sup>lt;sup>6</sup> Three main types of diversity: Ecological diversity (network of species in an ecosystem as well

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Service: <a href="https://ipbes.net/models-drivers-biodiversity-ecosystem-change">https://ipbes.net/models-drivers-biodiversity-ecosystem-change</a>

<sup>8</sup> EFRAG: <u>Download (efrag.org)</u>

<sup>9</sup> WWF: Living Planet Report 2018 | WWF

<sup>&</sup>lt;sup>10</sup> The Biodiversity Crisis Is a Business Crisis, March 2021, by Torsten Kurth, Gerd Wübbels, Adrien Portafaix, Alexander Meyer zum Felde, and Sophie Zielcke, BCG – Boston Consulting Group The Biodiversity Crisis Is a Business Crisis | BCG

<sup>&</sup>lt;sup>11</sup> UN SDGs: <u>E\_infographics\_14 (un.org)</u>

 <sup>12</sup> The Biodiversity Crisis Is a Business Crisis, March 2021, by Torsten Kurth, Gerd Wübbels, Adrien Portafaix, Alexander Meyer zum Felde, and Sophie Zielcke, BCG – Boston Consulting Group The Biodiversity Crisis Is a Business Crisis | BCG
 13 World Economic Forum, "Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy", 2020,

World Economic Forum, "Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy", 2020, http://www3.weforum.org/docs/WEF\_New\_Nature\_Economy\_Report\_2020.pdf

<sup>&</sup>lt;sup>14</sup> The Biodiversity Crisis Is a Business Crisis, March 2021, by Torsten Kurth, Gerd Wübbels, Adrien Portafaix, Alexander Meyer zum Felde, and Sophie Zielcke, BCG – Boston Consulting Group <u>The Biodiversity Crisis Is a Business Crisis | BCG</u>. Other sources say that over half of world GDP or about \$44trn is dependent on ecosystem services (WEF and AlphaBeta, 2020)

<sup>15</sup> The Economic Case for Nature A Global Earth-economy model to assess development policy pathways (worldbank.org)

### Pricing biodiversity: Biodiversity loss is as significant as climate change

To move towards this more rounded view, we feel it is important to properly understand the sustainability and financial implications of biodiversity loss for societies and economies, to clarify what drives biodiversity loss based on science, and to structure potential investor action around each of the identified biodiversity loss drivers. The following graphic aims to set out how those factors interact:

# The IPBES<sup>7</sup> identifies five primary drivers of biodiversity loss Land use and sea use change Overexploitation of natural resources The IPBES<sup>7</sup> identifies five primary drivers of biodiversity loss Spread of invasive species

The pressures on biodiversity from these five key drivers can then be associated with some clear consequences from both a financial and sustainability perspective<sup>8</sup>. Some examples follow.

### **Biodiversity already lost**

60% drop in the global wildlife populations in the last four decades (WWF, 2018)<sup>9</sup>

More than 60% of the biomass of all mammals is livestock (wild mammals comprise just 4%, the remaining 36% humans) (BCG, 2021)<sup>10</sup>

100% to 150% rise in ocean acidity projected by 2100 affecting half of all marine life (UN SDGs, 2020)<sup>11</sup>

Some 66% of marine ecosystems and 75% of terrestrial ecosystems have been severely altered by human activity, and 85% of wetlands have been lost (BCG, 2021) 12

### **Cost of inaction**

Over half of global GDP—around \$43trn—depends on high functioning biodiversity (WEF, 2020)<sup>13</sup>

Costs related to natural ecosystems degradation represent more than \$5trn per year for the global economy in the form of lost natural services (BCG, 2021)<sup>14</sup>

Collapse of just three ecosystem services – pollination, timber supply, and fish supply – would cost 2.3% of global GDP by 2030 (World Bank, 2021)<sup>15</sup>

### **Opportunity cost**

According to the European Union (EU), conserving marine stocks could increase annual profits of the seafood industry by more than €49bn, while protecting coastal wetlands could save the insurance industry around €50bn annually through reducing flood damage losses. (The EU Green Deal, 2020)<sup>16</sup>

Ecosystem services alone are worth more than \$150trn annually - about twice the world's GDP - according to academic research and BCG analysis. (BCG, 2021)<sup>17</sup>

TEEB<sup>18</sup> estimates and BCG analysis indicate that total annual ecosystem service value has declined by at least \$5trn since the late 1990s. That means each year the world economy forfeits ecosystem services worth about 6% of global GDP, an amount roughly equivalent to the total market value of agriculture, forestry, and fishery output in 2019 (BCG, 2021)<sup>19</sup>.

### What conclusion could investors take from this?

Growing social costs, and a depleting range of opportunities associated with suboptimal production and consumption patterns which are driving biodiversity degradation, will bring new challenges. The Dasgupta report (2021) showed that "between 1992 and 2014, produced capital per person doubled, human capital per person increased by about 13% globally; but the stock of natural capital per person declined by nearly 40%".<sup>20</sup> We believe this analysis emphasises that such continuous overexploitation of natural capital could trigger dynamics towards a global collapse, joining and amplifying the catastrophic forces of global climate change.

 $<sup>^{16}</sup>$  Factsheet-business-case-biodiversity\_en.pdf.pdf

<sup>17</sup> The Biodiversity Crisis Is a Business Crisis, March 2021, by Torsten Kurth, Gerd Wübbels, Adrien Portafaix, Alexander Meyer zum Felde, and Sophie Zielcke, BCG – Boston Consulting Group The Biodiversity Crisis Is a Business Crisis | BCG

<sup>18</sup> TEEB (The Economics of Ecosystems and Biodiversity) is an inter-governmental initiative commissioned at a 2007 meeting of environment ministers
19 The Biodiversity Crisis Is a Business Crisis, March 2021, by Torsten Kurth, Gerd Wübbels, Adrien Portafaix, Alexander Meyer zum Felde, and Sophie

Zielcke, BCG – Boston Consulting Group <u>The Biodiversity Crisis Is a Business Crisis | BCG</u>

<sup>20</sup> Final Report - The Economics of Biodiversity: The Dasgupta Review - GOV.UK (www.gov.uk)

To mitigate biodiversity loss, global economies will need to mobilise one of their most powerful weapons – financial flows. According to estimates from the Convention on Biological Diversity and the International Panel on Climate Change (IPCC), between \$150bn and \$440bn per year should be allocated to biodiversity

solutions in order to reverse biodiversity loss. <sup>21 22</sup> However, our view is that current financial flows from the private sector are merely a drop in the ocean. The Organisation for Economic Co-operation and Development (OECD) estimated that in 2020 only \$78bn to \$91bn was invested in biodiversity solutions, with the

large bulk of that from public financing.<sup>23</sup> We see this as a window for financial institutions to act on biodiversity today. The needs in terms of financial flows to protect biodiversity are huge, and it would allow them to participate in a new and significant transition opportunity alongside climate action.

### **BIODIVERSITY**

Biodiversity may be considered to be linked directly or indirectly to all of the 2030 Sustainable Development Goals (SDGs). But the main related SDGs are:















Primary: SDG 14 and SDG 15

Secondary: SDG 12

Others: SDG 13; SDG 6; SDG 3; SDG 2

### Committing to protect biodiversity: Rising momentum

Some key programmes are seeking to define and drive action around biodiversity, hoping to bring progress back on track after the UN reported that only a third of 113 countries were on track to achieve national targets to integrate biodiversity into national planning:<sup>24</sup>

### Post-2020 Global Biodiversity

**Framework (GBF):** This project is hoped to be signed off at COP15 later this year and could make that meeting as significant for biodiversity as the Paris COP21 was for climate. It is hoped that the GBF will deliver global and clear and actionable objectives that can work for all stakeholders, from governments to the private sector. We expect and call for the role of investors to be clearly defined within the GBF.<sup>25</sup>

**The SBTN and TNFD:** These initiatives have started to gather evidence on

the capacities of businesses and the financial industry to act on biodiversity with the objective to align private sector actions to reach global goals on natural capital protection.

**The Convention on Biological Diversity (CBD):** This body has set out goals that define the work of the SBTN and TNFD, which are expected to be reinforced by the coming GBF.

Structural initiatives like these have smoothed out the path for biodiversity to progressively move into strategic thinking – the EU Biodiversity strategy is a clear example – and into the regulatory and legal discussion, such as we have seen in the EU's Taxonomy. We believe this steady evolution will encourage the private sector, and particularly financial institutions, to consider biodiversity and sustainable management of natural resources

in their decision making. The trend is supported by key international commitments. G7 leaders have committed to halt and reverse biodiversity loss by 2030, to seek a dramatic increase in investment in nature from all sources, and to ensure nature is accounted for in economic and financial decision-making.<sup>26</sup>

Despite these efforts, there remains little consensus on the detail around practical approaches companies and investors can take to tackle biodiversity loss. Given the complexity, with multiple drivers across multiple biodiversity elements, investors are still a long way from a mature, comprehensive, all-purpose, and commonly shared integration approach. However, some solutions are already on the way.

<sup>&</sup>lt;sup>21</sup> CBD High-Level Panel, "Resourcing the Aichi Biodiversity Targets: An Assessment of Benefits, Investments and Resources Needs for Implementating the Strategic Plan for Biodiversity 2011-2020", Second Report of the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020 (Montreal: High-Level Panel on Global Assessment of Resources, 2014), https://www.cbd.int/financial/hlp/doc/hlp-02-report-en.pdf; IPBES, "Global assessment report on biodiversity and ecosystem services

of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors)".

<sup>22</sup> These figures are echoed by research from Credit Suisse and WWF Switzerland (\$200bn-300bn per year): Credit Suisse and WWF Switzerland, "Conservation Finance Moving beyond Donor Funding toward an Investor-Driven Approach", 2014, <a href="https://www.cbd.int/financial/privatesector/g-private-wwf.pdf">https://www.cbd.int/financial/privatesector/g-private-wwf.pdf</a>

<sup>&</sup>lt;sup>23</sup> Comprehensive Overview of Global Biodiversity Finance, OECD, April 2020 A Comprehensive Overview of Global Biodiversity Finance (oecd.org)

<sup>&</sup>lt;sup>24</sup> E\_infographics\_15 (un.org)

<sup>25</sup> FINANCIAL INSTITUTION STATEMENT AHEAD OF THE CBD COP15: Financial Institution Statement ahead of the CBD COP15 – Finance for Biodiversity Pledge

<sup>&</sup>lt;sup>26</sup> Government sets out commitments to biodiversity and sustainability in G7 Nature Compact - GOV.UK (www.gov.uk)

# Integrating Biodiversity: Data in, noise out

Biodiversity is more complex to measure than climate-change-related risks and opportunities. The topic still poses clear methodological and data-based challenges for corporates and investors, and improvements are required in the approaches and metrics that can generate extensive, high-quality data. The complex, compound nature of biodiversity – which includes different biomes, living and non-living elements, and levels of vulnerability to multiple drivers of biodiversity loss – amplifies issues common to all information in the environmental, social and governance (ESG) space. Biodiversity's specific challenges accentuate the need for:

- Access to data (availability, variety, and completeness) and data quality
- Development of tools and methods to treat complex compound biodiversity data
- Defining approaches and metrics to interpret data, act on biodiversity and track positive change.





New opportunities for companies

Our engagement experience with companies around biodiversity has shown that while company-level global biodiversity performance is tracked using a theoretical model, action taken by a company is always local. The challenge for executives, and the

concern for active responsible investors, is how these two paradigms can be successfully combined to build a coherent approach.



Gathering and interpreting biodiversity data requires the ability to deal with multiple data levels (scope, perimeter, and quality) and to establish the right causality relations. It is all about separating the 'signal' from 'noise' to identify the relevant information and with the proper interpretation of biodiversity impacts, dependencies and performance.

New biodiversity-focused solutions are being developed today that offer some hope in this regard. Innovators such as Iceberg Data Lab, CDC Biodiversité and ENCORE are seeking to drive a potential future consensus on biodiversity metrics by developing and testing approaches suitable for global corporate and portfolio biodiversity assessment.<sup>27</sup> Global ESG data providers are also expected to develop biodiversity solutions which could eventually be scaled up, even if not all of them will want, or be able to, rival dedicated biodiversity-specific tools.

There is a range of developed and potential biodiversity metrics. The key ones have been analysed and described in a quite detailed manner in such reports as the Guide by made by the Finance and Biodiversity Community as well as studies from the WWF. However, the investment community still aspires to a single metric that can capture the essence of positive biodiversity action. Agreement on metrics is of fundamental importance as corporates are building biodiversity commitments and setting biodiversity targets which will inform and influence investor decision making. Regulation will need to contribute to the search for agreement on this objective. In the meantime, though, biodiversity integration into strategies and decision making has begun. Action cannot wait.

<sup>&</sup>lt;sup>27</sup> AXA IM has <u>entered a partnership</u> with Iceberg Data Lab to develop biodiversity measurement tools

<sup>&</sup>lt;sup>28</sup> Some focus on impacts on ecosystems, habitats or land, while others focus on species or monetary values. Some approaches model or extrapolate biodiversity impacts from indirect environmental pressure (e.g. greenhouse gas emissions and water use) or economic data (e.g. spending on specific commodities) while others use primary and secondary biodiversity data (e.g. inventory of ecosystem extent and condition). Since all the different metrics answer different questions, the key is to find the one best suited for the particular business application

<sup>&</sup>lt;sup>29</sup> wwf assessing portfolio impacts final.pdf (panda.org)

<sup>&</sup>lt;sup>30</sup> Guide on biodiversity measurement approaches – Finance for Biodiversity Pledge

# Accounting for biodiversity financial risks and opportunities: Paving the way towards impact



Under a business-as-usual scenario, research from the IPBES has shown that some ecosystems could collapse entirely, compromising human socio-economic systems. It says that over the last 50 years, 14 of 18 categories of ecosystem services have been continuously declining, including natural regulation of climate, air and water quality, the regulation of hazards and extreme events, decontamination of soils, medical, biochemical and genetic resources, etc.

Such drastic levels of biodiversity loss have various natural, social and economic implications on different levels, often globally. Declines in biodiversity can be considered a development issue, 32 considering lower income countries can be disproportionately reliant on natural capital. In its 2021 biodiversity-related controversies study, 33 Moody's analysts showed that about 60% of controversies originated from four countries: The US, Indonesia, Malaysia, and Australia.

The degradation of natural ecosystems causes significant economic risks related to potential major fluctuations in raw material costs, disruptions in operations and supply chains, and so on with direct impacts on various sectors. In the context of rising transition risks related to regulation around biodiversity restoration globally, we believe those who seize this transition opportunity first could potentially see an advantage, while bringing real solutions on the ground, to protect biodiversity and preserve human living conditions long into the future. Most clearly, activities and sectors that are highly dependent on nature, such as the food industry, represent the biggest challenge - the food sector alone is responsible for almost 60% of global biodiversity loss.34

However, these areas may also provide the biggest opportunities in terms of transition towards sustainable consumption and development.

### **BIODIVERSITY**

0

The latest findings from a combination of the three widely used biodiversity-specific tools (Iceberg Data Lab, CDC Biodiversité and ENCORE) have shown agri-food, mining and manufacturing to be the most impactful and most dependent on biodiversity followed by construction, transportation and energy.

Agriculture, cattle breeding and fisheries are traditionally viewed as the key sectors with a huge impact on biodiversity and which also depend heavily on nature. Unsustainable livestock management, forestry,

<sup>&</sup>lt;sup>31</sup> The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is a sister initiative of the Intergovernmental Panel on Climate Change. Like the IPCC, the IPBES works to provide scientific evidence of biodiversity and natural capital degradation as well as of consequences of this loss for human society.

<sup>32</sup> Global Futures Technical Report.pdf (wwf.org.uk)

<sup>33</sup> Moody's ESG Solutions, May 2021 - ESG Measures - Global, Controversy risk assessment: a focus on biodiversity: CRA-focus-on-biodiversity.pdf (vigeo-eiris.com)

<sup>34</sup> Building sustainable food systems | WWF



mining, construction, chemicals, infrastructure, and energy (including fossil fuels and biofuels) are often associated with land or sea-use change and overexploitation of natural resources, as well as inefficient production and waste management.

These industries will be the first to experience the natural capital 'shortages' resulting from rapid biodiversity degradation. Furthermore, the loss of biodiversity may accentuate social issues related to human rights, working conditions, responsible consumption, as well as access to water and food (variety and quality), proper hygiene and sanitation, security and health risks, and population movements due to ecosystems degradation and climate modifications.

Delivering a successful transition in the key sectors to protect biodiversity is fundamental. New sustainable production and consumption models are required across industries for human society to effectively address this relationship between impacts and dependencies and thereby to mitigate biodiversity loss. We see several ways for companies to act on biodiversity, among them:

- Improve efficiency of production processes. This may include a reduction in resource use, and improved energy efficiency. There could also be regular, thorough environmental studies at a project stage, which allow for the protection of local species and sensitively integrate a project into its natural habitat. This may involve capital or operational expenditure to adapt production processes or to put in place ecosystem protection systems
- Enhance management of negative impacts on biodiversity (pollution reduction and control, rehabilitation of sites, etc.)
- Strengthen supply chain management and introduce a value chain approach to track indirect impacts on biodiversity (including ones related to products' use and end of life)

We believe that companies putting in place transition solutions could register better results in terms of production processes efficiency (operating cost reduction), will be more open to integrating innovation and new opportunities as well as having more control over their resources and supply chain - all of which should make them more resilient in the long run.35 Such activities can also be associated with positive 'impact' business models that drive sustainable production and consumption solutions. The creation of business models which respect the environment throughout the associated value chain (such as circular economy models) are part of this dynamic, as is the responsible management of real assets (e.g. forests, infrastructure), which are key to natural capital preservation. For the time being, such positive impact approaches around biodiversity need to be further developed if they are to be systematically applied.



<sup>&</sup>lt;sup>35</sup> EU: 11/12/20 EU 2030 Biodiversity Strategy (EU Green Deal Long View): In May 2020, the EU also published its 2030 biodiversity strategy, which to a great extent is connected to the "Farm-to-Fork" strategy. Among its key objectives: Establish protected areas for 30% of EU land and seas, and restore degraded ecosystems on land and sea across Europe by increasing organic farming, halting and reversing decline of pollinators, reducing the use and risk of pesticides by 50% and plant three billion trees. Overall, the EU plans to unlock €20bn a year for biodiversity (private and public spending).

<sup>36</sup> Handbook for Nature-related Financial Risks, Key concepts and a framework for identification, The University of Cambridge Institute for Sustainability Leadership, 2021: Handbook for Nature-related Financial Risks: Key concepts and a framework for identification | Cambridge Institute for Sustainability Leadership



## Translating biodiversity loss into a financial risk: Win-win or lose-lose?

It is clear that biodiversity loss presents businesses with physical, operational, reputational, regulatory and legal risks which can translate into bona fide financial risks. According to one study from the Institute for Sustainability Leadership, there are several types of financial risks directly related to biodiversity degradation, among them credit risk, market risk, liquidity and business risks.

Our view is that nature-related physical, transition and liability risks pose financial risks to businesses and financial institutions. We also believe biodiversity-aware investing can help prevent and mitigate those risks by allowing adoption of effective biodiversity protection solutions.

However, companies' actions around biodiversity differ greatly. In its 2021 biodiversity-related controversies study, Moody's analysts found that in 43% of the biodiversity-related cases assessed, companies failed to provide any response to allegations. Moreover, companies were assessed to have made a substantial, "proactive" response in only 19% of cases.<sup>37</sup> Moody's expects the response rate of companies to improve with the rising momentum around biodiversity among investors and regulators. To accompany this trend we have seen that investors are asking companies more questions to understand exposure to biodiversity risks, opportunities and impacts as well as to understand and support relevant biodiversity solutions.

<sup>37</sup> Moody's ESG Solutions, May 2021 - ESG Measures - Global, Controversy risk assessment: a focus on biodiversity: <u>CRA-focus-on-biodiversity.pdf</u> (vigeo-eiris.com)

# Managing the exposure: Biodiversity checklist

Biodiversity is a relatively new concept for financial institutions and despite rising political momentum, the operational momentum is still to be created. Investors have started to ask companies biodiversity-targeted questions and we expect this practice to ramp up in the coming years as our knowledge and experience expands. Despite limits related to development of biodiversity-specific data and metrics, some key performance

indicators (KPIs) associated with natural capital already exist and have been tracked by investors for some time (e.g. indicators related to waste, effluents pollution and greenhouse gas emissions) as part of their global ESG approaches. In general, we think investors actively integrating biodiversity and other ESG topics should look beyond a single list of KPIs, and develop a dialogue with issuers about how ESG and

biodiversity are integrated into core business models and strategy. The following table sets out a proposed example for assessing and tackling a company's biodiversity risk exposure.

### Tracking biodiversity integration by companies

Determine	Assess	Develop	Align with science-	Track change
the exposure	readiness	action plan	based targets	on the ground
A company's scope for action on biodiversity in relation to:  • The impact on natural capital its activities generate along the value chains  • Dependencies on natural ecosystems of its activities  • Biodiversity-related financial risks generated by such impacts, dependencies	A company's preparedness to act on biodiversity and its work to enhance it:  • Identify the most impactful operations, processes and potential alternatives  • Estimate the transition needs and timeframe, including related costs and opportunities  • Include biodiversity into the governance agenda on all levels  • Build awareness of biodiversity issues and priorities (staff training; proper incentives; promote understanding among partners, suppliers and other stakeholders)	A company's action plan responding to its key biodiversity and strategic priorities:  • Actions planned correspond to biodiversity priorities and integrate the sectoral and business model specifics  • Relevant actions are identified in every pillar of biodiversity protection: Biodiversity footprint reduction (at relevant points of the value chain); transformation and optimisation of operations and processes; biodiversity-related positive innovation; biodiversity-positive products, services.  • Concrete timelines, cut-off dates, goals including intermediate targets are set  • Key constraints and structural obstacles are identified  • KPIs to track performance are set	A company's systems to gain relevant expertise on biodiversity and to align with science to develop targets:  Responsibilities as regards biodiversity integration are distributed within a company and expertise is being built with relevant internal specialists  Processes to measure progress towards targets, review and enhance targets when relevant are introduced  Progress toward targets is reported	A company's planned programmes to track the state of biodiversity on the ground in areas of a company's physical presence (including regular environmental studies, audits, etc.). Also reports on changes and incentivises its partners and suppliers to do the same.



This document is for informational purposes only and does not constitute investment research or financial analysis relating to transactions in financial instruments as per MIF Directive (2014/65/EU), nor does it constitute on the part of AXA Investment Managers or its affiliated companies an offer to buy or sell any investments, products or services, and should not be considered as solicitation or investment, legal or tax advice, a recommendation for an investment strategy or a personalized recommendation to buy or sell securities.

It has been established on the basis of data, projections, forecasts, anticipations and hypothesis which are subjective. Its analysis and conclusions are the expression of an opinion, based on available data at a specific date.

All information in this document is established on data made public by official providers of economic and market statistics. AXA Investment Managers disclaims any and all liability relating to a decision based on or for reliance on this document. All exhibits included in this document, unless stated otherwise, are as of the publication date of this document.

Furthermore, due to the subjective nature of these opinions and analysis, these data, projections, forecasts, anticipations, hypothesis, etc. are not necessary used or followed by AXA IM's portfolio management teams or its affiliates, who may act based on their own opinions. Any reproduction of this information, in whole or in part is, unless otherwise authorised by AXA IM, prohibited. Design & Production: Internal Design Agency (IDA) | 18-UK-010959 - 05/2022 | Photo Credit: Getty Images