Lazard Perspectives

Biodiversity Data: Is It Fit for Purpose?

The momentum to address biodiversity loss is building, with almost 200 countries at COP15 in Montreal committing to halt and reverse the degradation of nature.¹ Meanwhile, policymakers and regulators are mobilising to address what is increasingly being regarded as an emerging systemic risk.

As with climate change, we believe managing the issue comes down to measuring the scale of the problem to successfully guide and target efforts in the investment community. But is biodiversity data fit for purpose to analyse and assess the risks and opportunities related to nature loss?



This paper explores the biodiversity data landscape, including a review of the datasets that are available and relevant to investors.

We find three key use cases of these datasets as ways to:

- Offer a high-level overview of a portfolio's exposure to biodiversity—analogous to determining a portfolio's carbon footprint
- Support bottom-up fundamental research
- Monitor corporate disclosures and support early-stage company engagement

Navigating the Biodiversity Data Landscape

Biodiversity data largely emanates from one of three sources: non-governmental organisations (NGOs), ESG data providers, and corporate disclosures. Tracking and measuring biodiversity loss is a complex topic, underpinned by diverse drivers, numerous interdependencies between natural biomes and systems, and highly location-specific factors. Despite the complexities and limitations in data accuracy and availability, we believe there are pockets of rich and useful datasets that can start to inform investors of their exposure to the risks and opportunities related to biodiversity.

Aggregated Metrics Could Result in False Interpretations

Partly driven by new regulatory reporting, ESG data providers have sought to find a solution for investors to report portfolio exposure by aggregating biodiversity information into a single metric—such as tracking climate change in metric tonnes of carbon dioxide. Some ESG data providers have combined datasets from NGOs, satellite images, and other sources to arrive at a score indicating a company's biodiversity footprint. Two metrics which have been gaining traction among data providers are the Mean Species Abundance indicator² and the Potentially Disappeared Fraction³ (see Appendix A).

While aggregated scores could offer a starting point for investors, they should be used with caution as they remain somewhat of a black box, in our view. The methodologies used are fairly opaque, incongruous, and based on a high degree of assumptions that ultimately results in a metric that overlooks company specifics and could feed false interpretations.

Regulatory reporting requirements may provide a role for scores based on aggregated data, but we believe a bottom-up approach to data selection and analysis is more additive to fundamental analysis and engagement. In our view, the most valuable and relevant biodiversity datasets originate from NGOs that have been focused on researching a particular facet of biodiversity (see Appendix B).



Mapping Biodiversity Data to Support Fundamental Research and Engagement

As with climate change, the financial materiality of biodiversity loss could manifest itself in different ways and will be dependent on the industry in question, as well as the regional exposure and company idiosyncrasies.

To provide a framework across our relevant portfolios and strategies for assessing biodiversity we have leveraged the work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)—which is rooted in years of academic research and science. IPBES has deconstructed the complex issue of biodiversity loss into five key drivers (Exhibit 1). Once the key drivers of biodiversity and ecosystem change are broken down, the sectors and industries that are most reliant on these natural systems, or most impacted by changes to them, can be mapped (Exhibit 2).

Investors can then start to assess where the most financially material biodiversity-related risks (and opportunities) potentially lie across sectors by leveraging the most appropriate datasets and applying in-depth company knowledge. For example, access to and the use of water, which falls under the *resource use/replenishment* driver, can be of material importance to companies in the food and beverage, industrials, utilities, and mining sectors.

To provide our relevant investment professionals with a resource to better understand water-related implications, we leveraged water datasets to build an internal proprietary tool: LAM Water Analytics. The tool is an example of how investors can use bottom-up data and analysis to develop broader global insights that account for sector and regional differences, as well as being a useful source for identifying engagement opportunities with companies.

Similarly for metals and mining—which is considered a highimpact sector and linked to the biodiversity driver of *pollution/ pollution removal*—where relevant and applicable, we have monitored and reviewed global tailing incidents to seek to assess the potential pollution risk posed by certain mining facilities, an issue that has impacted the performance of mining companies in recent years.

Biodiversity Disclosures Are Highly Reliant on Climate Data

Corporates are in the early stages of being guided on biodiversity-related disclosures. The Taskforce on Naturerelated Financial Disclosures (TNFD), launched in 2021, has built on the work of IPBES, and currently recommends that corporates provide biodiversity disclosures across 10 core sector-agnostic metrics. We have looked at whether these metrics map to any already available ESG metrics by screening Bloomberg data points as well as looking at the percentage coverage of these metrics across the MSCI ACWI (Exhibit 3).

Exhibit 1

Assessing Which Biodiversity Drivers Are Most Relevant – The Five Drivers of Biodiversity Loss



Exhibit 2

Mapping Industries to the Five Biodiversity Drivers



Given current data availability, our analysis finds that climate change is the only biodiversity driver where existing ESG disclosures provide good matches for all of the TNFD's recommended metrics, and with meaningful disclosure across companies in the MSCI ACWI universe. Greater corporate disclosure will be needed to better support investors' efforts on pricing biodiversity-related risks and opportunities. However, with ESG reporting burdens on companies already high, we think regulators and investors should be measured in their demands for more disclosure requests.

Exhibit 3 TNFD Recommended Core Metrics to Guide Corporates on Biodiversity Disclosures

	Driver	of Nature Change	Indicator	Match to Existing Bloomberg Metrics	% ACWI Coverage
		Climate change	GHG emissions	Exact	
	<u></u>	Land/Freshwater/Ocean-Use Change	Total extent of land/freshwater/ocean-use change	Partial/none	
	\$	Land/Freshwater/Ocean-Use Change	Land/freshwater/ocean-use change in prioritised ecosystems	None	
	٩	Pollution/Pollution Removal	Total pollutants released to soil split by type	Partial/none	
	٩	Pollution/Pollution Removal	Volume of wastewater discharged and concentrations of key pollutants in the wastewater discharged	Exact/partial	
6	٩	Pollution/Pollution Removal	Total amount of hazardous waste generated	Exact	
	٩	Pollution/Pollution Removal	Total non-GHG air pollutants	Exact	
	<u>#</u>	Resource Use/Replenishment	Water withdrawal and consumption from areas of water stress	Exact/partial	
		Resource Use/Replenishment	Quantity of high-risk natural commodities sourced from land/ ocean/freshwater	Partial	
		Resource Use/Replenishment	Quantity of natural commodities sourced from priority ecosystems	None	
		Invasive Alien Species Introduction/Removal	None	N/A	

Key

As at 31 May 2023 Source: Lazard, Bloomberg. % ACWI coverage by weight, TNFD

At this early stage of exploring biodiversity, we believe engagement with select companies is likely to be more insightful in understanding biodiversity-related issues than relying on data alone. We have opened dialogue where the issue of biodiversity is relevant to a company to understand the challenges they face and how they are planning to report to regulators and investors on this topic (Exhibit 4). Engagement by investors may encourage greater disclosure, and we expect collaborative engagement initiatives to take up this task as they have for climate metrics.

As measurement and disclosure of biodiversity-related metrics increases, corporates are likely to come under pressure to set targets and minimise related risks. In the same way that the Science Based Target initiative has created sector-specific science-based decarbonisation trajectories for companies aiming to be 1.5°C aligned by 2030, the Science Based Targets Network has released the first draft of its 2030 targets⁴ that will guide companies wanting to align with the G7's and COP15's commitments on nature. The piloting of science-based nature targets is in the very early stages, with targets from 17 companies (many within the food and beverages sectors) being assessed for validation in 2023.

Conclusion

Biodiversity is a highly complex issue with no easy answers in terms of how to measure and quantify the associated risks. What is clear, however, is that it will continue to rise up the political and regulatory agenda with some jurisdictions already mandating corporate and investor disclosures.

Biodiversity scores based on aggregated data may be required for reporting purposes but should be treated with caution. Corporates are only beginning to disclose the relevant information and investors are at the early stages of navigating this topic. Incomplete datasets and black-box metrics could feed false interpretations.

We believe bottom-up biodiversity datasets can help to support initial research for investors wanting to dig into the five biodiversity drivers, but that this is best supplemented by company-specific research and engagement to understand the potential risks more fully, as well as identify thematic opportunities in listed markets (Exhibit 5). Exhibit 4: Exploring Biodiversity in High-Impact Sectors

Case Study - Archer-Daniels-Midland Co. (ADM)

Objective: Engagement to specifically discuss the company's strategy to manage and address biodiversity risks and impacts.

Details of Engagement: ADM is one of the largest food commodities traders and processors in the world. Key commodities such as soybeans and palm oil have a variety of physical, regulatory, and reputational risks associated with biodiversity. The financially material biodiversity-related risks we identify relate to supply chain disruption, disruption in production capacity from biodiversity loss, and the risk of brand damage related to biodiversity issues.

Our Engagement Takeaways:

- Investors can help companies by focusing on disclosure for the most material issues (e.g., TNFD requirements)
- · Companies lack definitions from standard setters in terms of how to report biodiversity exposure
- Regenerative agriculture targets only quantify carbon emissions and not wider environmental metrics that are
 important for understanding biodiversity impacts
- · Proving additionality for carbon/biodiversity credits is challenging

Outcomes and Next Steps

Each of the underlying issues the company seeks to progress—such as regenerative agriculture and carbon offsets—are complex, in the early stages of being defined, and are challenging for investors to quantify in terms of risk and opportunity. Our engagement highlighted the challenges that companies face in understanding what information is most useful to disclose to investors, especially in the absence of agreed-upon standards and metrics.

We will build on the insights from this engagement by engaging with other companies in sectors for which biodiversity is a material risk.



Exhibit 5

Linking Biodiversity Drivers to Investment Opportunities

Appendix

Appendix A: Examples of Top-Down Aggregated Biodiversity Indicators and Their Providers

Data Provider	ESG Integration	Main Biodiversity Tool	Include Asset-Level Data	Solution for Regulatory Requirements	Use Case	Biodiversity-Related Metric(s)
S&P/Trucost	Integrates Biodiversity in scoring, controversy, and SDG products	Nature and Biodiversity Risk Tool	Yes		Estimate Biodiversity impact and dependency	Ecosystem footprint Dependency score
ISS	Integrates Biodiversity in scoring, controversy, and SDG products	BIAT (Biodiversity Impact Assessment Tool)	No	SFDR French Article 29 TNFD	Estimate Biodiversity impact	MSA PDF
Moody's	Integrates Biodiversity in scoring, controversy products	Percent of facilities with negative impact on local areas of Biodiversity	Yes	SFDR	Screen companies with operations close to biodiverse areas	Percent of facilities with negative impact on local areas of biodiversity
MSCI	Integrates Biodiversity in scoring, controversy, and SDG products	Biodiversity-Sensitive Areas Screening	Yes	SFDR Franch Article 20	Screen companies with operations close to biodiverse areas	Assets in Biodiversity- sensitive areas.
		Metrics Deforestation Screening Metrics		FTENCITAL LICIE 29		Business involvement in activities that lead to deforestation
Bloomberg	Integrates Biodiversity in scoring and controversy products	2023 Development Priority	Yes	SFDR TNFD	BYO model using company-disclosed Biodiversity-related metrics, supply chain, and business involvement screens	Bloomberg has select Biodiversity-related fields, asset location, and supply chain data
Carbon 4 Finance/CDC Biodiversité		BIA (Biodiversity Impact Analytics) GBS (Global Biodiversity Score)	No	SFDR French Article 29 TNFD	Estimate Biodiversity impact	MSA
Iceberg Data Labs		CBF (Corporate Biodiversity Footprint)	No		Estimate Biodiversity impact	MSA
RepRisk	Integrates Biodiversity in controversy products	Biodiversity risk tool	Yes		Screen Oil/Gas/ Mining companies with operations close to biodiverse areas and controversies	Biodiversity-related controversies and distance to KBAs on their projects' data
Sustainalytics	Integrates Biodiversity in scoring, controversy, and SDG products	2023 Development Priority	No		Measure company performance on Biodiversity targets, Board-level responsibility, and GHG emission (because of low disclosure, this will be very limited)	Sustainalytics has select Biodiversity- related ESG score input data points that are self-reported by companies

Based on individual data providers' methodologies, tools, and approaches.

Source: Lazard, Bloomberg, Carbon4 Finance, CDC Biodiversité, Iceberg Datalab, ISS, Moody's, MSCI, RepRisk, S&P Global Trucost, Sustainalytics

Appendix B: Bottom-Up Contextual Biodiversity Information

Data Provider	Focus area(s)	Brief Description	Our Assessment	Access
CDP	Climate/ water/forest (company specific)	Company-disclosed metrics & supporting explanation on their strategy, targets, and performance across climate, water, and forests	One of the most detailed datasets for investors to use, however, reporting can be burdensome and hence disclosure rates are limited (although increasing). Risks and opportunities, along with their associated monetary value and time frames are disclosed, making this the easiest dataset to directly link to financial materiality.	Licensed
IBAT (Birdlife International, Conservation International, IUCN, and UNEP-WCMC)	Biodiversity (location specific)	Location mapping of key biodiversity areas	Enables investors to easily utilise key NGO databases (KBA, Protected Planet, and IUCN's red list)—giving a site-level biodiversity indication of risk (i.e. near a site/area with protected or high biodiversity). However, it requires investors to have company operations location data and geospatial coding skills to do so). How to interpret and compare this information is left to the investor.	Licensed
<u>Biodiversity Risk</u> <u>Filter</u> (WWF)	Biodiversity (location specific)	Location mapping of key biodiversity risks	Data covers different environmental and social aspects of biodiversity risk via their open access online platform, complementing both ENCORE and IBAT. Allows user to drill down into very specific risks, some of which may be hard to link directly to financial materiality. Currently there is no option to download the data (although this is meant to be a future feature) meaning the existing web-based application has limited use for research at scale. How to interpret and compare this information is left to the investor.	Open Access
<u>Water Risk Filter</u> (WWF)	Water (location specific)	Location mapping of key water risks	Data covers different environmental and social aspects of water risk via their open access online platform. Allows user to drill down into very specific risks, some of which may be hard to link directly to financial materiality. Allows users to download data. Requires a geographic overlay of company sites. How to interpret and compare this information is left to the investor.	Open Access
Water Risk Atlas (WRI)	Water (location specific)	Location mapping of key water risks, both current and future	Data covers different environmental and social aspects of water risk via their open access online platform. Allows user to drill down into very specific risks, some of which may be hard to link directly to financial materiality. This provider also provider forward-looking scenario data points.	Open Access
Forest 500	Forest (company specific)	Assesses the relative strengths of reporting and commitments from companies with the highest exposure to forest-risk commodities	A useful engagement tool enabling comparison of commitment and ambition within and across sectors. Dataset is limited to 350 companies (and 150 financial institutions).	Open Access
Trace Finance	Forest (company specific)	Assesses exposure to high forest-risk commodities	A useful research and engagement tool, better used as an indicator rather than a standalone statistic given underlying data in the model is not all recent (i.e. palm oil deforestation and trade data is from 2015).	Licensed
<u>Nature Benchmark</u> (WBA)	Biodiversity (company specific)	Ranks companies identified as key biodiversity loss contributors based on 25 nature and 18 social indicators	Useful tool to supplement research, however, dataset is limited (400 companies across 8 industries—with plans to expand this). WBA also provides an index specific to food and agriculture.	Open Access
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Source: Lazard

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Notes

- 1 COP15: Key outcomes agreed at the UN biodiversity conference in Montreal
- 2 The Mean Species Abundance (MSA) metric is an indicator of local biodiversity intactness. MSA ranges from 0 to 1, where 1 means that the species assemblage is fully intact, and 0 means that all original species are extirpated (locally extinct).
- 3 Potentially Disappeared Fraction (PDF) of species is a life-cycle impact assessment intended as a measure of the local "damage to ecosystems" caused by specific human activity pressures. Disappearance refers to extinction in local communities. To compute the global impact of specific pressures, the PDF value is multiplied by the average local species density of a region (or mean global species density for simplicity) and then considered over the surface area of Earth (differentiated by land, freshwater, and marine areas).
- 4 Science Based Targets Network Interim Targets

Important Information

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