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Nature and biodiversity loss: how is it relevant to portfolios?



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Nature, and the resources and services it provides, underpins the economy and sustains life on earth. Yet indicators on the health of ecosystems are heading in the wrong direction, according to the Intergovernmental Panel on Biodiversity and Ecosystem Services (see box).

As awareness of the repercussions of these trends grows, stakeholders are coalescing around a global goal to halt and reverse nature loss by 2030, and to regenerate it in the longer term. This is shaping the direction of regulation.

As this theme evolves we see four mechanisms by which it can translate to risks and opportunities for investors:

1. Companies causing negative impacts on nature will face increased risks and costs
2. Companies' operations and supply chains are at increasing risk of disruption
3. Increased systemic and sovereign risks
4. Shifting financial flows and new investment opportunities

We will assess each of these to identify impacts for companies and portfolios.

Nature is in decline globally

75% of earth's land area has been significantly degraded

85% of wetland areas have been lost

25% of assessed species are threatened

50% of coral reefs have died or been destroyed

20% decline in abundance of native species

Source: IPBES Assessment, 2019

Definitions:

Biodiversity is the "variability of life on earth"

- Genetic diversity (within species)
- Species diversity (across species)
- Ecosystem diversity

"**Nature**" includes biodiversity as well as the physical world and biogeochemical cycles, upon which biodiversity depends

Source: Convention on Biological Diversity

1. Companies causing negative impacts on nature

Pressure is increasing to reduce and reverse damage to nature through tighter regulations of harmful practices, increased oversight of supply chains, taxes on polluting activities, and increased litigation. Examples of this can be seen in the EU Farm to Fork strategy¹ cutting use of harmful pesticides and fertilizers by 2030; negotiations on a global treaty on plastic pollution; and expanded due diligence requirements for products linked to deforestation.



Failure to manage these risks could result in increased operating costs, lower revenues, loss of access to markets, and increased costs of capital. Companies that have traceable supply chains, use resources more efficiently, and innovate to provide lower-impact products, however, could see greater opportunities.

Using the five drivers of nature loss identified by Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), which can each be linked to a range of company activities and impacts, provides a framework to identify material risks among businesses and in portfolios (Figure 1).

Company disclosures across many of these issues are mixed, but external initiatives provide valuable inputs – for instance, deforestation data from Forests 500 and CDP Forests; plastics data from the Ellen MacArthur Foundation; chemicals data from ChemSec; wastewater quality data from regulatory agencies and CDP Water; and a range of data from the World Benchmarking Alliance.

2. Disruption to companies' operations and supply chains

Risks will arise not only where companies impact nature, but also where they depend upon it. The resources and services that nature

provides, such as water availability, healthy soils or pollination, will become increasingly disrupted if current trends continue. This could result in price volatility, operational and supply disruption, and stranded assets. However, companies that are evaluating risks in their supply chain and seeking to improve resilience of the resources on which they depend may be less vulnerable.

The ENCORE tool (Exploring Natural Capital Opportunities, Risks and Exposure) developed by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) provides an evidence-based assessment of the vulnerability of economic activities to disruption (Figure 2).

In addition, the use of mapping data on the degradation of ecosystem services can further highlight possible hotspots of higher risk related to these activities.

3. Increased systemic and sovereign risk

Nature-related risks will also flow through the wider economy via impacts on inflation, GDP, disruption to trade and social unrest. The World Economic Forum estimates that 55% of global GDP is dependent on high-functioning biodiversity and ecosystem services², highlighting the scale of the issue, while the UK Treasury's Dasgupta Review in

2021 argued that the entire economy is "embedded within" nature.³

Financial institutions will face risks. Studies from the Dutch and French central banks estimate that between 36% and 42% of their financial institutions' portfolios are comprised of assets that are highly dependent on nature.⁴ Similarly, a World Bank study of Brazilian banks found that 20% of credit portfolios were highly dependent on nature.⁵






The potential for negative feedback loops between nature and climate change is another concern. Forests, soil and the ocean all store carbon, but climate change may reduce their ability to do so, increasing net emissions and limiting the potential of nature-based solutions. Climate change can also reduce the resilience of ecosystems, for example by changing the suitability of habitat, reducing water availability or changing weather patterns. Severe tail-risk events such as reduced rainfall in the Amazon, which would have major consequences for regional economies and food systems, might also become more likely.

Economies which appear to be at potentially higher risk due to the nature-dependence of their GDP and negative indicators of ecosystem health include South Africa, India, Turkey, Mexico, Brazil and Argentina.⁶



Figure 1: Company contributions to nature loss

5 Drivers of nature loss, and their impacts:

 Ecosystem change	Drivers Harm to protected areas or resources directly or through suppliers (e.g., impacts from farming)	Sector relevance Food & beverage, agriculture oil & gas, mining, utilities, renewables, transports, construction, real estate, financials	Potential risks Supply disruption, operational disruption, increased cost of capital, stranded assets, reputational and litigation risk	Investment opportunities Alternative proteins, precision agriculture, synthetic biology, sustainable/alternative textiles, lower impact mining
 Invasive species	Drivers Introduction of invasive species via transport	Sector relevance Transport/shipping, tourism	Potential risks Supply disruption, operational disruption	Investment opportunities Water filtration, DNA monitoring technology
 Pollution	Drivers Pesticides, nitrogen fertilizer, plastics and microplastics, wastewater, air emissions	Sector relevance Food & beverage, agriculture, chemicals, water utilities, manufacturing, heavy industry, packaging, financials	Potential risks Increased taxes or restrictions on sales of chemicals, pesticides or fertilizers, Fines, taxes and/or capex to mitigate pollution	Investment opportunities Bio-based chemicals, chemical clean up, synthetic biology, recycling technologies, alternative fertilizers and pesticides, wastewater treatment, air pollution reduction technologies
 Climate change	Drivers Greenhouse gas emissions	Sector relevance Emissions intensive sectors and those with product and supply chain emissions	Potential risks Supply chain disruption, operational disruption, physical asset risk, human capital & health care costs	Investment opportunities Renewable energy providers and their supply chain, electric vehicles, building technology and energy efficiency providers
 Exploitation of resources	Drivers Over-fishing, timber-mismanagement, degradation of land and soils, overuse of water	Sector relevance Food & beverage, agriculture, apparel, forestry, technology, financials	Potential risks Increased costs for resource use/access, changes to subsidy and incentive structures, demand shifts for products	Investment opportunities Blockchain and related technologies for supply chain transparency

Source: Columbia Threadneedle Investments 2022



4. Financial flows and investment opportunities

As all of these factors evolve we expect to see lower willingness to invest in companies linked to harmful activities; increased investment in real assets and new types of assets such as forestry, sustainable agriculture, nature-based solutions and blue bonds; and new investment opportunities in technologies that can help reduce impacts on nature.

Avoiding harm and finding new opportunities

Europe’s 2021 Sustainable Finance Disclosure Regulations (SFDR) are already leading to greater scrutiny of companies’ track records and involvement in nature-related impacts and controversies. Increasing numbers of investors are also adopting exclusions related to nature – for instance at COP26 global investors pledged

to eliminate deforestation from portfolios by 2030. This trend is likely to continue.

The next phase of the EU Taxonomy may steer investment towards companies that positively impact biodiversity. However, we think the draft criteria are narrowly defined, potentially leading to only a sliver of companies being able to evidence eligibility. More positively, we believe the development of this theme will support long-term investment opportunities in technologies that can increase productivity in the use of resources (Figure 1).

Figure 2: The disruption of products and services

Products and services	Economic processes ‘highly’ or ‘extremely’ vulnerable to disruption
Water quality and availability	<ul style="list-style-type: none"> ■ Alcoholic fermentation and distilling ■ Tobacco production ■ Water treatment and distribution ■ Agriculture and forestry ■ Cotton, paper, natural fibre production ■ Construction materials production
Soil quality Pollination Forests Fibres	<ul style="list-style-type: none"> ■ Agriculture and forestry ■ Livestock (leather) ■ Construction materials production ■ Tobacco production
Coastal protection Erosion control Local climate regulation	<ul style="list-style-type: none"> ■ Power transmission and distribution ■ Transport networks ■ Oil and gas and renewables

Source: ENCORE/UNEP FI/UNEP WCMC/Global Canopy

Conclusion

Nature and biodiversity loss is a complex and fast-evolving theme. Economic conditions in 2022 may prove a hiccup in efforts to reduce nature loss, but over time the scale of the risks will increase pressure to reduce impacts and to remedy damage. Milestones such as the UN’s COP15 negotiations on a global biodiversity agreement, related regulatory proposals and initiatives such as the Taskforce for Nature-related Financial Disclosures will give an indication of the pace of evolution, and will remain a focus in our research and engagement.



Food & Materials transition engagement: Biodiversity and deforestation

Company



Sector and country

Retail, USA

Why we engaged

We wanted to better understand Home Depot's sourcing commitments and encourage their further development.

How we engaged

Video call with VP of Sustainability and several portfolio managers.

What we learnt

The company's disclosure is lacking in detail, but it does have granular information on the origin and certification status of its wood products, which it will disclose. The company has also committed to respond to the CDP Forests questionnaire. Home Depot's wood sourcing policy will be expanded to a wider range of at-risk forest regions – including those where it does not source - to avoid ambiguity. Sourcing of slower growing timber used in building materials, such as spruce and hard pine, poses a barrier to Home Depot adopting more comprehensive commitments on deforestation and forest degradation.

Outcome

Management heard our views on the need for continuous improvement in policies and disclosure on wood sourcing. We will review its progress and updated disclosures next year. Its policies on deforestation will rightfully remain a focus, given growing biodiversity and climate risks. The discussion highlighted the need to balance progress on company commitments with ensuring they are meaningful, achievable and avoid unintended consequences.

- 1 European Commission, Farm to fork strategy, as at August 2022
- 2 Today's Environmentalist, A fifth of countries worldwide at risk from ecosystem collapse, as at August 2022
- 3 Gov.uk, Final Report - The Economics of Biodiversity: The Dasgupta Review, HM Treasury, August 2021
- 4 Banque De France, Eco Notepad, Post n°248 Biodiversity loss and financial stability, Mathilde Salin et al, May 2022
- 5 Open knowledge repository, Nature-Related Financial Risks in Brazil, Pietro Calice, Frederico Diaz Kalan, Faruk Miguel, August 2018
- 6 Swiss Re Institute, 2020



Food & Materials transition engagement: Biodiversity impacts and risk management

Company



Sector and country

Financials, France

Why we engaged

Biodiversity is an emerging area where impacts and risk can be difficult to quantify. We wanted to understand the approach taken by AXA, one of the more proactive insurers on this theme.

How we engaged

Video call with Group Chief Corporate Responsibility Officer.

What we learnt

At group level, biodiversity is being integrated as an extension of AXA's climate approach and strategy; it sees biodiversity as an eventual part of its regulatory framework, as with climate risk. There is some integration of biodiversity issues to products – for instance innovation in parametric insurance, and inclusion of provisions in environmental liability insurance to prevent biodiversity risk. Within asset management AXA is working with Iceberg Data Labs to measure biodiversity impacts and is focused on reducing impacts to forests and the ocean, via engagement and exclusions.

Outcome

While early stage, AXA appears to be taking a holistic approach to biodiversity, identifying both risks and opportunities and linking biodiversity to wider themes including climate change and health, across different parts of the business. This provides reassurance on biodiversity risk management and is a useful comparison for other insurers.



Food & Materials transition engagement: Biodiversity and deforestation

Company



Sector and country

Consumer discretionary,
Switzerland

Why we engaged

Richemont has an increasing proportion of revenue derived from leather goods following the acquisition of the Delvaux business. We wanted to understand the company's approach to leather-related deforestation risk, considering pending EU regulation.

How we engaged

Video call with Group Corporate Communications and IR Director.

What we learnt

Biodiversity- and nature-related risks are among the priorities of the company's newly appointed Chief Sustainability Officer, with a strategy and roadmap due in 2023. On leather sourcing, at present 60% of animal hides are derived from Europe, and 71% from tanneries certified by the Leather Working Group. The company is transferring the remainder of sourcing to Europe by 2024 for Group businesses ex-Delvaux. This is for several reasons, including deforestation, improving traceability for animal welfare standards, and as part of the efforts to reduce the GHG footprint as part of the net zero goal. The approach for Delvaux has not yet been outlined but is a focus area.

Outcome

We were reassured by the company's evolving approach to sustainability, particularly the appointment of the CSO and the evidence of the thoughtful and well-integrated approach, including on leather sourcing. We will follow up with the company on the establishment of their biodiversity roadmap and sourcing for Delvaux.