

Biodiversity

Why investors
should care

Foreword

The past 30 years have seen a bigger improvement in human prosperity than all of the past centuries combined. We have built more roads, buildings and machines than ever before. More people are living longer and healthier lives and access to education has never been better.

The average GDP per capita has grown more than 15-fold since 1820. More than 95 per cent of newborns now make it to their 15th birthday, as opposed to just one in three in the 19th century.¹

However, such progress has come at a great cost. As humans thrived, nature suffered.

Humans are wreaking havoc on nature. They are driving animal and plant species to extinction and destroying their habitats to feed the ever-increasing population. And for some decades now, they have been consuming more natural resources than the Earth can naturally replenish in a 12-month period, drawing down on what's available for future generations.²

Putting an end to this unsustainable relationship demands a deeper understanding of the biosphere's impact on human well-being and its contribution to economic growth.

Policymakers now consider biodiversity protection as urgent a priority as halting global warming. The UN COP15 biodiversity summit in Montreal in December, the biggest in a decade, will aim to agree on ground-breaking targets for 2030 to protect nature.

But such efforts should not be confined to the policy arena. The financial industry, too, must play a more active role.

¹ Our World in Data, accessed at 14.10.2022

² Global Footprint Network, accessed at 14.10.2022



As a steward of global capital, the finance industry is uniquely positioned to help build an economy that works with, rather than against, nature. It can facilitate a nature-positive transition, by transforming the way it allocates capital to businesses and developing new models to price biodiversity risks and opportunities more accurately.

It is worth noting that by channelling investment to companies developing advanced environmental technology and services, the financial industry has helped improve efficiency in everything from energy use, agriculture, trade and transport. For example, thanks to the development of agritech, the world can produce almost three times as much cereal from a given land as it did in 1961.³ The rate of improvement in the average cereal yield has outpaced that of the population growth.

However, the bulk of mainstream investments flows to incumbent economic activities that both knowingly, and inadvertently, cause environmental and social harm. The finance industry, therefore, must add its heft to the global effort to reduce harm, while also enhancing nature recovery.

All of this explains why Pictet Asset Management has become a founding partner in a new four-year global research programme geared to helping the financial industry develop strategies to protect natural capital and halt biodiversity loss.

The Finance to Revive Biodiversity (FinBio) programme, which will be overseen by the Stockholm Resilience Centre at the University of Stockholm, aims to develop valuable research that should help the finance industry transform current practices – which reward growth at the expense of biodiversity – to a new model which accurately captures – and attaches an economic value to – the nature-positive quality of a business.

³ Our World in Data, accessed at 14.10.2022

Funded by the Swedish Foundation for Strategic Environmental Research (Mistra), the programme will break new ground by bringing together a diverse consortium of academic researchers that rarely interact, as well as financial-sector partners.

The consortium has set itself ambitious targets. The first task is to translate biodiversity and natural capital data into metrics that asset managers and asset owners can understand and use. The second objective is to establish a financial framework that will facilitate the development of a new class of nature-aligned securities, capital that can be harnessed to achieve biodiversity goals and build a genuinely sustainable economy.

The financial industry – banks, asset managers and asset owners – has for too long ignored the threat biodiversity loss presents to human prosperity and growth. It must now acknowledge the crucial role it has to play in repairing the biosphere and placing the economy on a more sustainable footing.

LAURENT RAMSEY

*Managing Partner
of Pictet Group*

PROFESSOR BEATRICE CRONA

*Deputy Science Director
at Stockholm Resilience Centre
and Senior Scientific Advisor
to the Mistra Finance to
Revive Biodiversity
(FinBio) programme*

CHAPTER 1

Nature and ecosystem services

In the book “Man and Nature”, American scholar George P. Marsh issued a stern warning to humanity: we risk destroying ourselves and our planet if we don’t halt the ruthless exploitation of our natural resources. Marsh was writing in 1864, when the world was in the grip of the Industrial Revolution.

Yet in the century and a half that has passed, economists, policymakers and corporations have made little progress in understanding – let alone attaching a value to – nature’s contribution to the economy.

It’s a troubling oversight.

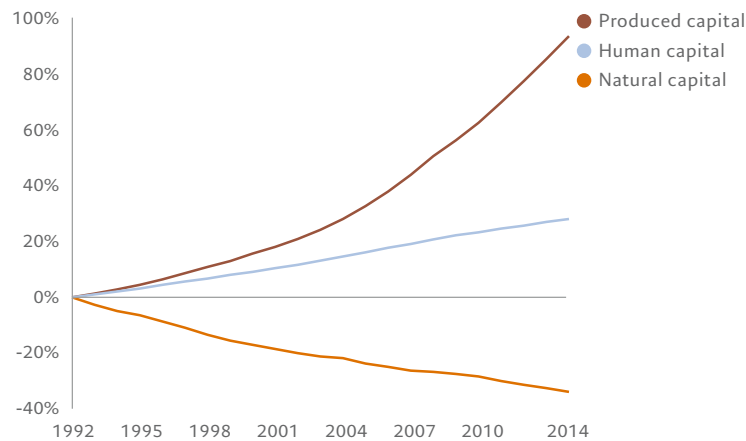
The natural world not only gives us the raw materials we use as economic inputs, but through its complex ecosystems it also provides vital processes such as pollination, water purification and soil recycling.

In ignoring all this, we underestimate the threat biodiversity loss and the depletion of our resources present to growth and human prosperity.

The problems arising from our “take, make and dispose” approach to economic development are encapsulated by a concept known as the “environmentalist’s paradox”. Simply put, it states that humans have thrived at nature’s expense.

Data shows that, in the period 1992-2014, the amount of capital goods – such as roads, machines, buildings, factories and ports – generated per person doubled.

FIGURE 1
Global capital stocks per capita, 1992 - 2014



Source: Managi and Kumar (2018)

Note: Produced capital refers to roads, ports, cables, buildings, machines, equipment and other physical infrastructures. Human capital refers to education and longevity. Natural capital is calculated with renewable and non-renewable resources including agricultural land, forests as sources of timber, fisheries, minerals and fossil fuels.

Over the same timeframe, however, the world's stock of natural capital – water, soil and minerals – per person declined by nearly 40 per cent.⁴

Equally worrying, a landmark UN report warns that up to one million animal and plant species are at imminent risk of extinction.⁵

Species loss in particular has a direct impact on economic activity and human welfare. Take medicine. More than one third of modern drugs are derived from flora and fauna, and the pharmaceutical industry uses as many as 70,000 different species of plants.

As a direct result of biodiversity degradation, the world is already losing one potentially critical drug every two years.⁶ For instance, a species of Himalayan yew tree that is used to produce Taxol, a chemotherapy drug to treat cancer, is on the brink of extinction due to overharvesting and its use as fuel.⁷

Yet medical therapies represent only a fraction of what humans stand to lose from the depletion of the Earth's biodiversity.

“AS A DIRECT RESULT OF BIODIVERSITY DEGRADATION, THE WORLD IS ALREADY LOSING ONE POTENTIALLY CRITICAL DRUG EVERY TWO YEARS.”

The natural world provides numerous “ecosystem services” that humans cannot live without.

Pollination, for example, is critical in agricultural production and food security. Of the 115 major crops grown worldwide, 87 depend on natural pollination, an ecosystem service currently provided for “free” by insects and other pollinators. The global economic value of pollination is estimated to be as much as USD387 billion annually.⁸

4 The Economics of Biodiversity: The Dasgupta Review. Accessed at 14.10.2022

5 IPBES. Accessed at 14.10.2022

6 Biodiversity, drug discovery, and the future of global health: Introducing the biodiversity to biomedicine consortium, a call to action, December 2017, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5735771/>

7 IUCN Red List, accessed at 14.10.2022, <https://www.iucnredlist.org/>

8 Porto, R.G., de Almeida, R.F., Cruz-Neto, O. et al. Pollination ecosystem services: A comprehensive review of economic values, research funding and policy actions. *Food Sec.* 12, 1425–1442 (2020). <https://doi.org/10.1007/s12571-020-01043-w> Accessed at 14.10.2022.

More broadly, the total sum of ecosystem services is estimated to be as high as USD140 trillion a year – or 60 per cent more than global GDP.⁹

But it's a system built on increasingly unstable foundations. By drawing down on our resources more quickly than nature can replenish them and by failing to invest to preserve biodiversity, humans have already severely degraded some 60 per cent of the world's ecosystem services.¹⁰

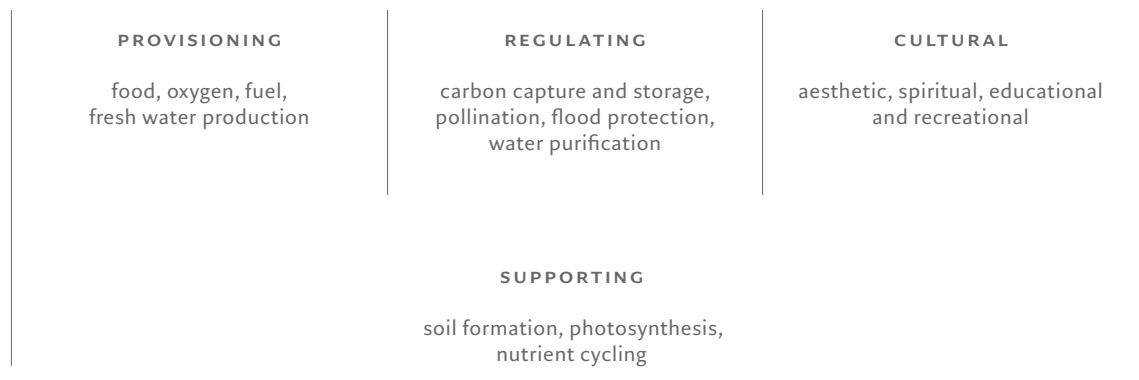
“HUMANS HAVE ALREADY SEVERELY DEGRADED SOME 60 PER CENT OF THE WORLD'S ECOSYSTEM SERVICES.”

Recent advances in technology offer the promise of using natural capital in more efficient ways.

Scientists estimate that the efficiency with which humans transform natural capital into GDP is currently improving at an annual rate of 3.5 per cent; for natural capital drawdown to halt, though, the efficiency improvement would have to climb to 10 per cent per year.¹¹

But greater efficiency – welcome as that would be – is unlikely to be enough. Building an economy that is in harmony with nature also demands a greater understanding of the risks. Governments, regulators, corporations and consumers will all need to play their part.

Ecosystem services: a subsidy to humanity



Source: UN Millennium Ecosystem Assessment Available at <https://www.millenniumassessment.org/en/index.html> accessed 14.10.2022

9 Biodiversity: Finance and the Economic and Business Case for Action, May 2019, <https://www.oecd.org/environment/resources/biodiversity/Executive-Summary-and-Synthesis-Biodiversity-Finance-and-the-Economic-and-Business-Case-for-Action.pdf>

10 Millennium Ecosystem Assessment, accessed at 14.10.2022

11 The Economics of Biodiversity: The Dasgupta Review, August 2021



Biosphere and atmosphere: an intimate relationship

Given the magnitude of the threat, one would think reversing biodiversity loss is a priority for both businesses and investors.

But it isn't.

Although an increasing number of companies are committing to net zero emission plans, few, in our view, consider the loss of natural ecosystems a corporate responsibility.

To be fair, it is easy to see why.

Biodiversity is complicated. Unlike climate change, which has an extensive research infrastructure and well-defined physical targets, biodiversity is a messy and dynamic system that doesn't lend itself easily to practical analysis, as many scientists attest. And that's not least because more than 80 per cent of the world's species – and therefore their habitats – remain undiscovered.¹²

However, given the intimate relationship between climate and the biosphere, the two crises can only really be tackled together.

Nothing makes that point more emphatically than a recent study showing that ocean and land ecosystems remove around half of anthropogenic CO₂ emissions from the atmosphere every year.¹³

“HALF OF OUR ‘CLIMATE DEBT’ IS REMOVED, FOR FREE, BY THE BIOSPHERE EVERY YEAR — A VAST SUBSIDY TO THE WORLD ECONOMY.”

Put another way, half of our “climate debt” is removed, for free, by the biosphere every year – a vast subsidy to the world economy.

A weakened biosphere, therefore, risks derailing our efforts to halt climate change. Growing awareness that a healthy natural world is indispensable to achieving net zero carbon pledges has helped raise the profile of biodiversity in the environmental debate.

For all the ominous warnings Marsh gave, the 19th century environmentalist also expressed hope in his book that technological advances a couple of generations later, combined with political and public resolve, could one day arrest degradation and restore and regenerate the natural world.

¹² Sweetlove, L. Number of species on Earth tagged at 8.7 million. *Nature* (2011).

<https://doi.org/10.1038/news.2011.498>

¹³ PNAS September 21, 2021 118 (38) e2115218118;

<https://doi.org/10.1073/pnas.2115218118>

CHAPTER 2

Policy changes and emerging risks for companies and investors

Protecting the world’s biodiversity and natural capital has become a priority for policymakers and regulators. The UN Summit in Montreal in December 2022 is expected to approve a set of ground-breaking biodiversity targets. The hope is that a landmark deal could have the same transformative effect as the Paris Accord on climate change, which brought together more than 190 countries and aligned finance flows and investment portfolios with climate objectives.

TABLE 1
Twin challenges

	CLIMATE CHANGE	BIODIVERSITY
UN body providing scientific assessments	IPCC (Intergovernmental Panel on Climate Change)	IPBES (Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services)
Financial industry body promoting financial disclosure	TCFD (Taskforce on Climate-related Financial Disclosure)	TNFD (Taskforce on Nature-related Financial Disclosure)
Legally binding international treaty	UNFCCC (Framework Convention on Climate Change)	UN CBD (Convention on Biological Diversity)
International accords	Kyoto Protocol (1992) Paris Agreement (2016)	Aichi Target (2010) Montreal Agreement? (2022)
Economic instruments/incentives	Carbon pricing, tax, permits	Biodiversity tax, permits*
Annual finance flows	USD632 billion**	USD78-91 billion***

* / *** OECD (includes public expenditure; private expenditure is estimated to be USD6.6-13.6 billion per year)
** Climate Policy Initiative

According to the draft agreement, the Montreal Accord will commit signatories to restore at least 20 per cent of degraded ecosystems, protect at least 30 per cent of the world’s sea and land areas, control invasive species, reduce pesticides by at least two-thirds and eliminate pollution from plastic waste.¹⁴

It also proposes to contribute to global climate mitigation and adaptation efforts, sequestering as much as 10 gigatonnes of CO₂-equivalent by protecting natural habitats and the carbon they store.

¹⁴ Convention on Biological Diversity. Available at <https://www.cbd.int/article/draft-1-globalbiodiversity-framework> accessed at 14.10.2022

Pay as you harm

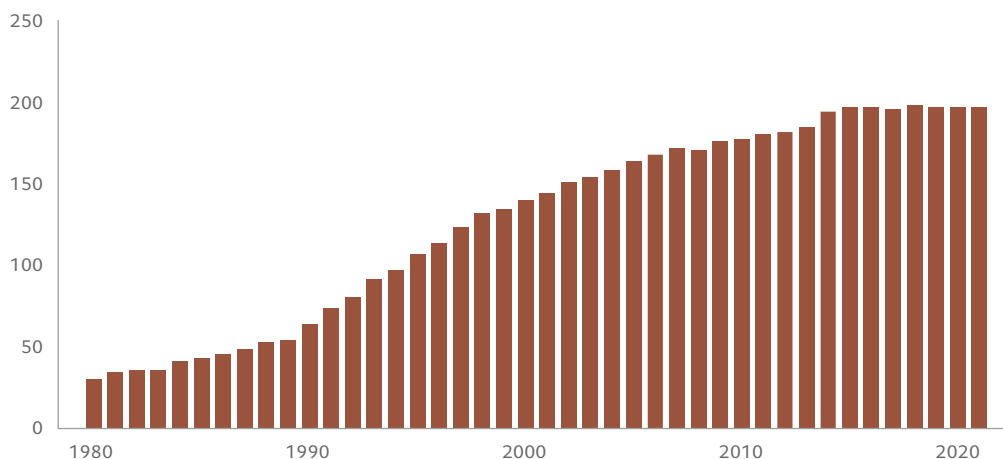
Once these targets become national policy, halting biodiversity loss could vault climate change as policy-makers' most pressing environmental concern.

Businesses and investors can ill-afford to ignore the shift in attitudes. With net zero as the template, there is every possibility that the policy and regulatory framework for biodiversity could be established within a matter of months.

Already, some 62 countries apply a total of 234 biodiversity-related taxes and regulations – including taxes on pesticides, fertilisers, forest products and timber harvests – more than double the level seen in the 1990s. Working in the same way as carbon taxes, these measures make it more expensive to use natural resources or pollute and thus incentivise producers and consumers to switch to a nature-positive alternative.

Across all countries, these biodiversity-focused taxes generate almost USD8 billion a year in revenue.¹⁵ When other instruments such as tradable permits and offsets are included, the figure increases to USD30 billion. Businesses should expect the biodiversity tax burden to grow. According to the OECD, there is “substantial potential” to scale up the use and ambition of biodiversity-related taxes.

FIGURE 2
Number of biodiversity-relevant taxes



Note: 33 biodiversity-relevant taxes are not included in this figure as starting dates are not available
Source: OECD PINE database

¹⁵ OECD. Tracking Economic Instruments and Finance for Biodiversity (2021) Available at <https://www.oecd.org/environment/resources/biodiversity/tracking-economic-instruments-and-finance-for-biodiversity-2021.pdf> accessed at 14.10.2022f

Risks for businesses and investors

How might corporations and their investors respond to the problem of biodiversity loss?

To begin with, companies should acknowledge the threat it presents to their bottom line.

These risks can manifest themselves in a number of ways.¹⁶

Transition risks

For affected businesses, biodiversity loss can lead to higher costs, lower revenue and increased litigation risk if their operations harm biodiversity. Financial risks are also relevant here. They include increased costs of capital or lending requirements, asset write-offs, increased insurance claims, higher premiums and loss of insurance value. The negative perception of a business represents a reputation risk.

What is more, sudden changes in regulation and policies to address biodiversity loss or shifts in consumer or investor sentiment can negatively impact companies and even lead to stranded assets, just like in climate change.

Physical risks

Risks related to the physical impacts of biodiversity loss causing direct economic and financial losses for businesses and investors. Biodiversity risks can damage assets and infrastructure or cause a deterioration in supply chains or business operations. Risks can be acute, stemming from one-off events such as natural disasters, or chronic, materialising steadily over time. An example of chronic risk is deforestation, which can trigger floods or reduce local rainfall, raising operational and insurance costs for various industries. Food producers could face a long-term decline in production and revenue as nutrient-rich soil disappears because of intensive farming.

¹⁶ Mistra, Aligning Markets with Biodiversity (2021). Available at: <https://www.mistra.org/wp-content/uploads/2021/09/mistra-bp-aligning-marketswith-biodiversity-2021.pdf> Accessed at 14.10.2022

Liability risks

Risks related to litigation and broader liability claims relating to biodiversity loss and legal breach, such as common law or failure of reporting biodiversity loss. In the EU, for example, the new human rights and environmental due diligence (mHREDD) framework requires companies to take steps to avoid or minimise damage on biodiversity or face fines and legal action from victims. The directive will be in place by 2024, covering some 13,000 EU companies and 4,000 non-EU companies operating in the bloc.¹⁷

Systemic risks

Worryingly for both corporations and their investors, if transition and physical risks aren't properly mitigated, they can quickly morph into systemic risks, or those related to systemic impacts of biodiversity loss related to systemic impacts of biodiversity loss. They include: (i) the risk that a critical natural system no longer functions properly; (ii) risks that arise at portfolio level (rather than at organisation or transaction level) of a financial institution; and (iii) a risk to system-wide financial stability.

The financial system can be affected through a sudden event causing at-scale biodiversity loss, or due to a failure in system functions as a result of biodiversity loss.

Consider for example biodiversity risks for companies in the Brazilian beef and soy industry. While deforestation linked to the agricultural sector may expose them to a reputational or litigation risk if laws against deforestation tighten, it is not yet a direct short-term physical threat to the soy or beef industries as a whole. This is because impacts of deforestation – such as reduced rainfall – take time to materialise. Yet they affect the crop yield in the future. What is more, through global interconnections, they will affect rainfall and climate elsewhere, thus increasing the potential negative impact on investments in agricultural commodities far removed from the Amazon.¹⁸

¹⁷ European Commission. Available at https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145 accessed at 14.10.2022

¹⁸ Beatrice Crona, Carl Folke, Victor Galaz, *One Earth*, Volume 4, Issue 5, 2021, Pages 618-628, ISSN 2590-3322, <https://doi.org/10.1016/j.oneear.2021.04.016>

The Anthropocene reality of financial risk

by Beatrice Crona, Carl Folke, Victor Galaz¹⁹

Countless blogs and articles on sustainability geared toward financial audiences reinforce the idea of ESG scores as a means to shift sustainable investing from a “niche” practice requiring specialised knowledge to one that is more accessible to a far wider range of prospective investors.

In the year following the launch of the Morningstar sustainability rating tool, funds scoring high on sustainability (4–5 globes) received a total net inflow of more than USD24 billion, while those ranking low lost USD12 billion in investments.²⁰ This shows the power of ESG and rating tools to move markets and is precisely the ambition of the financial industry.

The irony is that current ESG ratings are based on a risk perception that does not account for externalities, and therefore is unlikely to address the root causes undermining sustainability. A comparison of deforestation risk and environmental ESG scores emphasises this point.

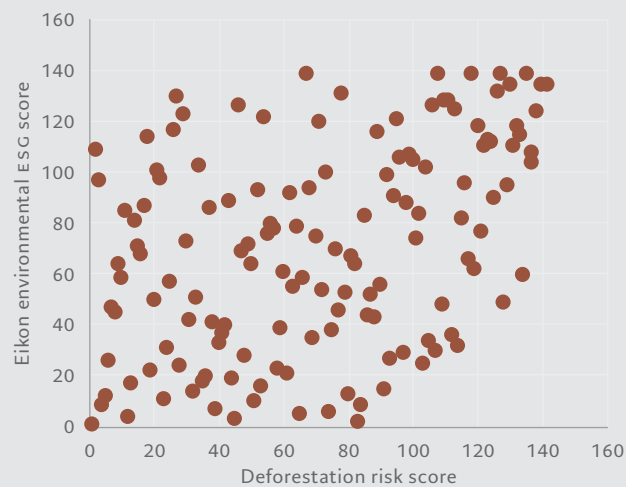
¹⁹ This is an excerpt from a paper written by Beatrice Crona, Carl Folke, Victor Galaz, *One Earth*, Volume 4, Issue 5, 2021, Pages 618–628, ISSN 2590-3322, <https://doi.org/10.1016/j.oneear.2021.04.016>

²⁰ S.M. Hartzmark, A.B. Sussman Do investors value sustainability? A natural experiment examining ranking and fund flows *J. Finance*, 74 (2019), pp. 2789–2837

Correlation between the environmental ESG scores from (otherwise reads like it is Eikon's own score for its deforestation contribution) one prominent ESG provider (Refinitiv Eikon) and deforestation risk scores for 143 companies covered by the annual Forest 500 review shows that environmental ESG scores currently do not capture well the assessed risk of company operations and trade (see FIGURE 3). In fact, companies with documented poor engagement with deforestation risk-reducing measures receive some of the highest environmental ESG scores.

At this point in history, societies and economies ... need a financial sector that supports a transition toward a regenerative real economy building a resilient biosphere and that reduces and mitigates current harm to the planet, thereby reducing the risk of cascading and systemic shocks.²¹

FIGURE 3
Comparison of deforestation risk and environmental ESG scores



Based on share dilution from secondary issuance and index inclusion net of corporate buybacks.

Source: MSCI, Thomson Reuters DataStream. Accessed at 14.10.2022.

²¹ Toward a theory of sustainable finance T. Walker, S.D. Kibsey, R. Crichton (Eds.), *Designing a Sustainable Financial System: Development Goals and Socio-Ecological Responsibility*, Springer International Publishing (2018), pp. 329-346

Strengthening biosphere resilience through active stewardship in this way would also strengthen the financial sector in the long term. The rapidly developing sustainable finance agenda is a response to this growing awareness. However, mainstream approaches for delivering on sustainability ambitions (such as ESG) are on a trajectory that is currently off the mark.

Shifting financial sector norms and practices is ... not about altruism, but about self-preservation. It necessitates a move toward hard-wiring structures and processes that ensure capital is allocated to activities that can promote long-term biosphere resilience (doing good), while simultaneously reallocating it away from that which is doing harm.

Doing this will require forging new alliances between science and finance, but also new transdisciplinary research to assist finance in developing risk management tools to better address the Anthropocene reality and ensure that the development of impact accounting is grounded in both social and environmental sustainability science.

The rise of nature-positive accounting

Having identified the threats from biodiversity, companies and investors can start including natural capital in their decision making.

There are a number of economic and risk models which can help them.

The UN, for instance, has developed a set of environmental statistics and accounts which allow investors to compare and make informed decisions, just as they do on gross domestic product (GDP), trade or expenditure.²²

The UN System of Environmental Economic Accounting forms part of a recently unveiled plan by the US government to embed nature capital in the national balance sheet and in official US economic statistics, such as GDP, by 2036.²³

The proposal says natural assets are currently omitted from the national balance sheet despite being a core asset class within the country's macro economy. For instance, a new bridge will appear as a produced asset on the national balance sheet, but investment in new regenerative farming will likely be lost within the economic accounting system.

“DESCRIBING NATURAL CAPITAL AS ONE OF GDP’S WELL-KNOWN BLIND SPOTS, THE US WANTS TO EMBED NATURAL CAPITAL ON THE NATIONAL BALANCE SHEET AND IN OFFICIAL ECONOMIC STATISTICS.”

Describing natural capital as one of “GDP’s well-known blind spots”, the ground-breaking proposal sets out the country’s ambition to take the lead in developing global standards for measuring natural assets and providing statistical series. This, the proposal says, should help US businesses improve competitiveness, secure long-term shareholder value, manage supply chain risks and minimise environmental risk exposure.

²² System of Environmental and Economic Accounting available at <https://seea.un.org/> accessed at 14.10.2022

²³ White House, National Strategy to develop statistics for environmental economic decisions (2022) available at <https://www.whitehouse.gov/wp-content/uploads/2022/08/Natural-Capital-Accounting-Strategy.pdf> accessed at 14.10.2022

In the future, accounting for natural capital on balance sheets could transform the way investors assess return on investment of an asset class or indebtedness of a sovereign or an entity and identify new opportunities.

Another proposal is to incorporate biodiversity and ecosystem services into the UN's Social Development Goals, which asset managers use to assess sustainable investment outcomes.

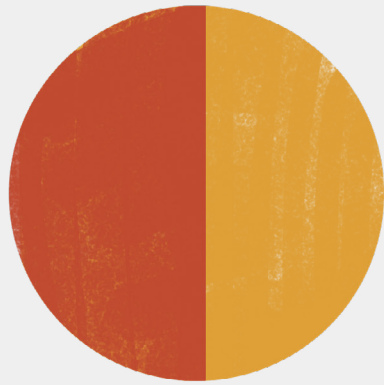
Researchers have identified that biodiversity and ecosystem services are under-represented in the SDGs – or present in only 35 out of 150 targets within eight goals – even though they are relevant to every single goal.²⁴

Take for instance SDG2, which calls for zero hunger by 2030 with eight specific targets. While biodiversity is a key factor in achieving food security and improved nutrition, there is no reference to it.

²⁴ Global targets that reveal the social-ecological interdependencies of sustainable development, July 2020, <https://www.nature.com/articles/s41559-020-1230-6>

CHAPTER 3

Biodiversity finance



Even if businesses and investors advance their understanding of how they impact and are impacted by biodiversity loss, such efforts will come to nothing without an accompanying revolution in biodiversity-related capital.

The OECD estimates that investments aimed at protecting biodiversity stand at less than USD100 billion a year. That's a paltry sum, particularly when compared with what climate change attracts (USD632 billion), or with the USD500 billion per year invested in activities that lead directly to the destruction of natural habitats, such as fossil fuel extraction and agricultural subsidies.

Historically, biodiversity finance has tended to focus on raising money for conservation activities. More recently, however, there has been a steady increase in biodiversity and natural capital investment, including securities that explicitly aim to minimise biodiversity loss and capitalise on the potential for long-term capital growth.

Take for instance green and sustainability-linked bonds, which earmark proceeds for environmental projects. The OECD estimates that at least USD4-5 billion of green-labelled bonds have been issued to finance projects related to sustainable land use, which may deliver biodiversity benefits.²⁵ Fixed income instruments designed to finance sustainable marine and fisheries projects – or blue bonds – are also gaining traction, it adds.

Overall, the sustainable bond market is expected to grow significantly in the coming years. Research undertaken for Pictet Asset Management by the Institute of International Finance suggests issuance could reach an annual pace of USD4.5 trillion per year by 2025, compared with just over USD1 trillion in 2021.²⁶

Separately, more than 100 financial institutions overseeing some EUR14 trillion of assets across 19 countries have already signed a pledge committing to protect and restore biodiversity through their finance activities and investments.²⁷ Their goals – by 2024 at the latest – include engaging with companies; assessing impact of their financing activities and investments; disclosing targets and reporting annually on contribution to global biodiversity goals.

25 OECD, A Comprehensive Overview of Global Biodiversity Finance, available at <https://www.oecd.org/environment/resources/biodiversity/report-a-comprehensive-overview-of-global-biodiversity-finance.pdf> accessed at 14.10.2022

26 Pictet Asset Management, Bonds that build back better, available at <https://am.pictet/en/globalwebsite/global-articles/2022/expertise/esg/ESG-bond-market-transformation/tab/Foreword> accessed 14.10.2022

27 Finance for Biodiversity Pledge, available at <https://www.financeforbiodiversity.org/> accessed 14.10.2022

Encouragingly, the asset management industry is beginning to offer investors more choices when it comes to investing in biodiversity compared with a few years ago. There have been high-profile launches of funds investing in companies specialised in biodiversity restoration and ecosystem services in the past couple of years, with nine out of eleven such funds having debuted since 2020. Assets under management in this group have more than doubled to USD1.3 billion from just USD525 million at the start of the decade.²⁸

“TRANSFORMATION IN CURRENT FOOD AND LAND USE IN FAVOUR OF REGENERATIVE PRACTICES HAS POTENTIAL TO CREATE A BIODIVERSITY AND NATURE MARKET WORTH USD4.5 TRILLION BY 2030.”

Funds investing in biodiversity and natural capital aim to help embed more sustainable and regenerative business practices across a whole value chain, involving industries such as agriculture, forestry, IT, fishery, materials, real estate, consumer discretionary and staples, utilities and pharmaceuticals.

A report by the Food and Land Use Coalition, for instance, has found efforts to transform current food and land use in favour of regenerative, productive and circular practices will open up new value chains and business models. The report estimates that such transformation has potential to create a biodiversity and nature market worth USD4.5 trillion by 2030.²⁹

²⁸ Source: Broadridge and Pictet Asset Management, data as of 31.07.2022

²⁹ Source: Food and Land Use Coalition, September 2019, <https://www.foodandlandusecoalition.org/wp-content/uploads/2019/09/FOLU-GrowingBetter-GlobalReport.pdf>

Developing a biodiversity market

In order to fully align the financial system with the health of the biosphere, it is imperative that the scientific and financial community work together to, on the one hand, develop global standards for the measurement and reporting of biodiversity impacts and, on the other, uncover viable natural capital investment opportunities.

The Taskforce for Nature-related Financial Disclosures (TNFD) provides a good starting point in this endeavour. The body, representing financial institutions, corporates and market service providers with nearly USD20 trillion in assets, is developing and delivering a risk management and disclosure framework for firms to report and act on evolving nature-related risks. The TNFD wants to help shift global financial flows away from nature-negative activities and towards nature-positive outcomes.

Specifically, scientists, companies, investors and policymakers can work on areas such as:

- Deploying data science techniques to new and existing datasets to help properly monetise ecosystem services and support businesses and investors in delivering positive biodiversity outcomes
- Analysing the performance of (un)sustainable investments in different asset classes using novel datasets
- Harnessing new technologies, including distributed ledgers and smart contracts, to enable the efficient deployment of capital into sustainable investments

Equally importantly, the industry must also develop a new framework to identify risks or shocks that are aggravated by investments into certain sectors and businesses directly or indirectly.

All of this, in turn, should help develop a thriving and profitable biodiversity market which may transform how we value natural capital and ecosystem services, as well as a nation's wealth and competitiveness.

Conclusion:
designing a nature-positive
financial system

For more than 10,000 years, human prosperity has centred on the drawing down of natural capital – the world’s stock of food, clean air, water and fertile soil. But in recent decades, those resources have been used at a faster rate than they can be replenished. This unsustainable approach to economic development has had a devastating effect on ecosystems; it also carries risks for growth and human welfare well into the future.

Encouragingly, momentum is building among policy-makers and regulators to establish a new, legally binding global accord to reduce biodiversity loss. Such a framework is likely to be agreed at the COP15 Montreal Summit in December.

Already, scores of countries are incentivising businesses to protect biodiversity and promote the sustainable use of natural resources through a variety of taxes, fees, charges and permits; the number of biodiversity-related measures will grow in the coming years.

Adding further momentum to these efforts is the ground-breaking proposal by the US to include the value of nature capital and ecosystem services in its national accounts by 2036.

Attempts by governments and regulators to measure – and attach a value to – nature’s contribution to the economy represent considerable progress. As the renowned management consultant Peter Drucker said: “what gets measured gets improved”.

But policymakers cannot turn the tide on their own.

The corporate and financial sector must also do more to place the world on a path to sustainable growth. To begin with, businesses and investors require a clearer understanding of the risks biodiversity degradation presents to their bottom line and portfolios.

The threats aren’t just physical. They are regulatory, legal and reputational as well. Yet the financial industry and the investment community can also make a bigger contribution to help restore what has been lost.

By developing a thriving natural capital market, investors can help shift capital flows away from businesses and projects that degrade the natural environment and towards regenerative initiatives.

Nature has always been the economy’s most important asset. It is time the finance industry recognised that.



Mistra Finance to Revive Biodiversity (FinBio) research programme

Pictet Asset Management is a founding member of a new four-year global research programme geared to helping the financial industry develop strategies to protect natural capital and halt biodiversity loss.

The biodiversity research programme, led by the Stockholm Resilience Centre at Stockholm University, will develop new methods and indicators to help the financial sector align its investments with biodiversity goals and contribute significantly to a nature-positive economy.

The four-year programme, funded by the Swedish Foundation for Strategic Environmental Research (Mistra), brings together a consortium of academic and private sector organisations, including the UN Principles for Responsible Investment and Stanford University. It will also consider ethical aspects and governance issues linked to the pricing of biodiversity.

Synthesising the lessons of previous and ongoing market initiatives and investigating future risks and opportunities will be part of its work too.

Specifically, in cooperation with our scientific and financial sector consortium members, we aim to focus on areas including:

- developing novel metrics and datasets to calculate biodiversity loss and measure its economic and financial impact
- measuring biodiversity-related risks at company and portfolio level
- developing sophisticated and measurable ways to incorporate biodiversity in strategic engagement with companies
- assessing prospects for biodiversity/ecosystem markets and other nature-positive investments
- identifying most promising technologies, financial mechanisms and economic tools to safeguard natural capital

More details can be found at:

<https://www.stockholmresilience.org/research/research-news/2022-03-31-new-funding-will-boost-efforts-towards-a-greener-economy.html>

GABRIEL MICHELI

*Senior Investment Manager
at Thematic Equities*

STEVE FREEDMAN

*Head of Sustainability Research
at Thematic Equities*

Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship



**Stockholm
University**

 **MISTRA**

The Swedish Foundation for
Strategic Environmental Research

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