CIEEM in practice

Issue 125 | September 2024

Bulletin of the Chartered Institute of Ecology and Environmental Management

Investing in the Benefits of Rewilding

Biodiversity Credits: An Emerging Market to Restore Nature

Green Bonds: Financing Nature's Recovery

The TNFD Framework and Implications for Ecological Advocacy

Financing Nature's Recovery

A Huge Increase in Private Sector Investment is Essential to Address the Biodiversity Crisis: How Can We Make This Happen?

Figure 1. Thrift (*Armeria maritima*), Pembrokeshire, Wales, May 2022. Photo credit: Helen Evriviades.

George Whalley
Stantec

Keywords: data, funding gap, green finance, nature-tech, private sector

> **"It is not the strongest of the species that survives, not the most intelligent that survives. It is the one that is the most adaptable to change."**

The existential challenge facing humanity from the biodiversity and climate crises mean that we need to embrace change. We need to adapt our economic model to help boost biodiversity and we need to do it quickly. This article explores the characteristics of the private biodiversity market, the information and technology used for decision-making, and the key issues in unlocking greater levels of private investment.

The above quote, which has been misattributed to Charles Darwin, encapsulates the existential challenge facing humanity from the biodiversity and climate crises. Whatever its source, it also suggests change is the solution we need to embrace. We need to adapt our economic model to help boost biodiversity and we need to do it quickly.

We must address these crises by drawing in significant levels of private sector finance to fund a growing wave of biodiversity restoration projects. In my view, private sector involvement is essential to help restore nature. Here I want to explore the characteristics of the private biodiversity market, the information and technology used for decision making (i.e. nature-tech; see Box 1), and the key issues to be addressed to unlock greater levels of private investment.

A note of caution: I'm aware this subject matter can be controversial, so the analysis needs to be guided by the following key questions. Is it greenwashing? What about people? Does it take account of local communities and the rights of Indigenous People? Will it ultimately be positive for biodiversity? I address these questions at the end of the article. Definitions for some of the terms used are given in Box 1.

Box 1. Key definitions

Blended finance Mixing public, philanthropic (i.e. grants) and private funds in common investment schemes to reduce risks and maximise investment

Credit stacking Applying multiple credit schemes to the same piece of land; for example Biodiversity Net Gain, carbon credits and nutrient mitigation credits

Green finance Money provided for biodiversity projects by investors seeking a financial return

Institutional investor An organisation that invests money on behalf of others; for example pension funds, banks and insurance companies

Nature-tech Technology firms, platforms, apps, digital tools and innovative solutions to promote, measure, monitor and enable delivery of biodiversity projects

Taskforce on Nature-related Financial Disclosures (TNFD) Market-led framework for firms to assess, report and disclose business-related biodiversity issues

The biodiversity funding gap

First, a description of the problem and the cost of addressing it. Solving the biodiversity crisis will involve eye-watering amounts of cash to be spent on massively scaling up current delivery over vast areas of the globe; that is, for habitat restoration/protection and sustainable land management. The cost of funding these projects globally is around £680 billion per annum (p.a.; GPC/Finance Earth 2021). The problem is that we are currently only spending approximately £130 billion (i.e. 20% of estimated need), and approximately 90% (£110 billion) is provided by the public sector. The private sector is only funding around 3% of total need (approximately £15–20 billion p.a.) (GPC/Finance Earth 2021). See Figure 2.

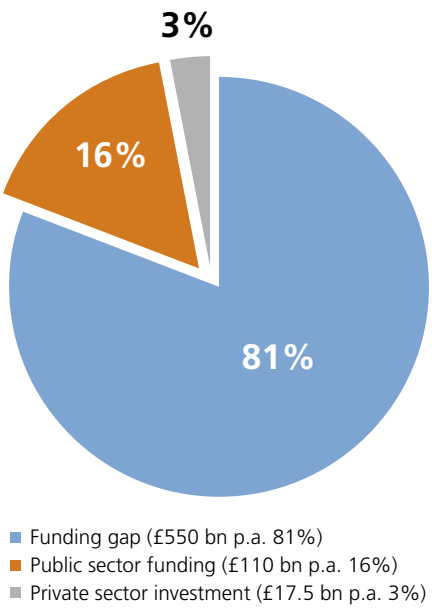

Figure 2. The biodiversity need (£680 billion p.a.) and spend.

This is an issue for several reasons. Perhaps the main one is that it's unrealistic to expect taxpayers to continue to bridge the funding gap (£550 billion p.a.). It simply can't afford it. The private sector will need to step up and play its part if we are to stand any chance of bridging this major funding gap.

But why would the private sector want to invest in biodiversity anyway? Well, one major reason is that an estimated 50% of total global gross domestic product relies on nature. It's in the private sector's own interests to support biodiversity. Aligned with this is an increased understanding of nature-related risks, and the need to manage those risks.

> **"Why would the private sector want to invest in biodiversity? One major reason is that an estimated 50% of total global gross domestic product relies on nature."**

A common example is arguably the most important economic sector of all; the agriculture that produces the food we eat. The agricultural sector relies on the declining population of insects for pollination of crops. But if it makes economic sense to halt the decline of biodiversity, why isn't the private sector doing it already? The answer is market failure, which means the public sector also needs to intervene and support the private sector (see recommendations at the end).

There is enough private sector money to address the issue if the will existed. The global capital markets are worth a staggering £180 trillion, so to address the biodiversity funding gap would only require about 0.5% of total market value (SIFMA 2023). One quite radical suggestion we picked up in our stakeholder engagement is to charge a 1 basis point (i.e. 0.01%) levy on every market transaction to help address the crisis.

How the market can be part of the solution

At this point some readers may be somewhat suspicious. After all, the market has arguably caused the problem so can it really be part of the solution? Here I provide a brief justification for the market through a basic economics/history lesson.

The capitalist market mechanism evolved from the late medieval period and has proven itself the most effective means of matching goods and services to those that need them. While this has often been at the expense of nature due to its reliance on growth/consumption, it has also managed to significantly raise living standards, spur science, innovation and boost life expectancy.

Thomas Hobbes' depiction of pre-modern life as "nasty, brutish and short" is relevant here. A good analogy of the effectiveness of the market involves screws. Pop down to any trades wholesaler and look at how many different types of screw are available. There are thousands for all different purposes. Wood screws, machine screws, thread-cutting screws, sheet metal screws, socket screws, etc. The list goes on… .

In contrast, the centrally planned economies of the Eastern Bloc in the last century had a major issue getting the right types of screw for projects and as a result their economy ground to a halt. They could only produce hundreds of screw types as opposed to thousands and they struggled to supply them in time.

The relevance to biodiversity is to demonstrate how the market, in supplying all the screws required in the real world, is perhaps the most effective way of addressing specialised needs in a complex and interrelated system, i.e. similar to the complex systems of the natural world. If a particular demand is there, the market finds a way of supplying need, especially at scale. In this way it generally outperforms an army of well-intentioned public sector groups trying their best to plan and direct positive action for nature. The key issue is the imperative to scale up projects due to the size of the funding gap.

The state of the private green finance market

The bulk of private sector investment, around 70%, comes from institutional investors seeking a financial return on their investment; that is, adopting a revenue model (GPC/Finance Earth 2021, UN Environment Programme 2022). This includes mainstream banks, private equity, specialist impact funds, venture capitalists and high-net-worth individuals/family offices. These investors use a variety of traditional financial instruments such as debt (i.e. green bonds/loans), equity or a combination of both.

Essentially, they are investing in biodiversity projects because they expect a financial return. They might also be motivated by creating a positive impact for nature, but this can vary significantly between investors. The bottom line is that these investors are unlikely to invest unless there is demonstrable future revenue stream.

The other key group is businesses investing in projects to reduce their costs: those businesses that have realised it's in their economic self-interest and/or understand their nature-related risks. This is the cost-benefit model and covers approximately 30% of total private investment (GPC/Finance Earth 2021, UN Environment Programme 2022). It includes water companies investing in green roofs, permeable pavements and wetlands to help reduce their water treatment costs, and insurance companies investing in satellite imagery in sub-Saharan Africa to provide early warnings on droughts to allow watering of crops to reduce payouts. Some businesses invest in projects to enhance their brand or reputation (we must be careful this isn't just greenwashing, which can be disproved through transparency on the real impact of a project), or as a form of 'in-setting'; that is, reducing a company's biodiversity impacts for compliance reasons.

Many investors combine, or 'stack', revenue and cost-benefit models to maximise financial benefits. Blended finance is also a key feature of the market. This involves a combination of public sector grants/guarantees with private sector investment. Blended finance is an important means of de-risking projects and will be a critical feature of expanding private sector investment.

In terms of sources of investment, Europe is currently leading the way, at around 59%, with North America next on 20%. Around 63% of biodiversity investment is spent on projects in the Global South (i.e. Central/South America, Africa and Asia) with Latin America currently attracting the highest number of projects (32%), but Asia attracts the largest in terms of total investment value (38%) (GPC/Finance Earth 2021).

The private sector currently spends approximately £15–20 billion p.a. on projects that can be defined as helping biodiversity. The top three types of project by value are: sustainable supply chains (£6.5 billion, 30%), for example agricultural businesses investing in organic farming processes to ensure compliance with retailers' sustainability standards; biodiversity offsets (£4.5 billion, 23%), for example companies buying credits to offset impacts; and payments for ecosystem services, for example voluntary sales of carbon credits from landowners to companies to fund peatland restoration projects (£2.5 billion, 12%) (UN Environment Programme 2022).

The importance of nature-tech

Information is king. Due to the complexity of biodiversity and detachment from human systems, getting trustworthy and timely information on projects is a particular challenge. This is a key issue for expanding and scaling up biodiversity investment. In mainstream markets, investors have robust, standardised information at the push of a button and so the thought of investing in loosely defined remote pieces of land on the other side of the world involves a major culture change and significant improvements to information systems.

This is where 'nature-tech' is critical. Nature-tech includes a wide and growing range of digital tools, platforms and applications to define, monitor and measure biodiversity projects. There has been a recent explosion in nature-tech firms setting up with hundreds, if not thousands, of new companies currently looking for business. Europe (and UK in particular) has been a trailblazer but North America is now a key hub for nature-tech firms (e.g. Bloom Labs, www.bloomlabs.earth; see also Nature4Climate 2022).

Nature-tech generally uses combinations of different technologies depending on their purpose. The main technologies include bio-acoustic sensors, camera traps, drones, satellites and eDNA sampling. The key issue for nature-tech is finding the best mix of technologies to reach a balance between robustness, cost-effectiveness and usability. Due to the complex nature of biodiversity there is a constant battle to avoid overcomplicating the metrics. This is particularly challenging where environments are highly heterogeneous

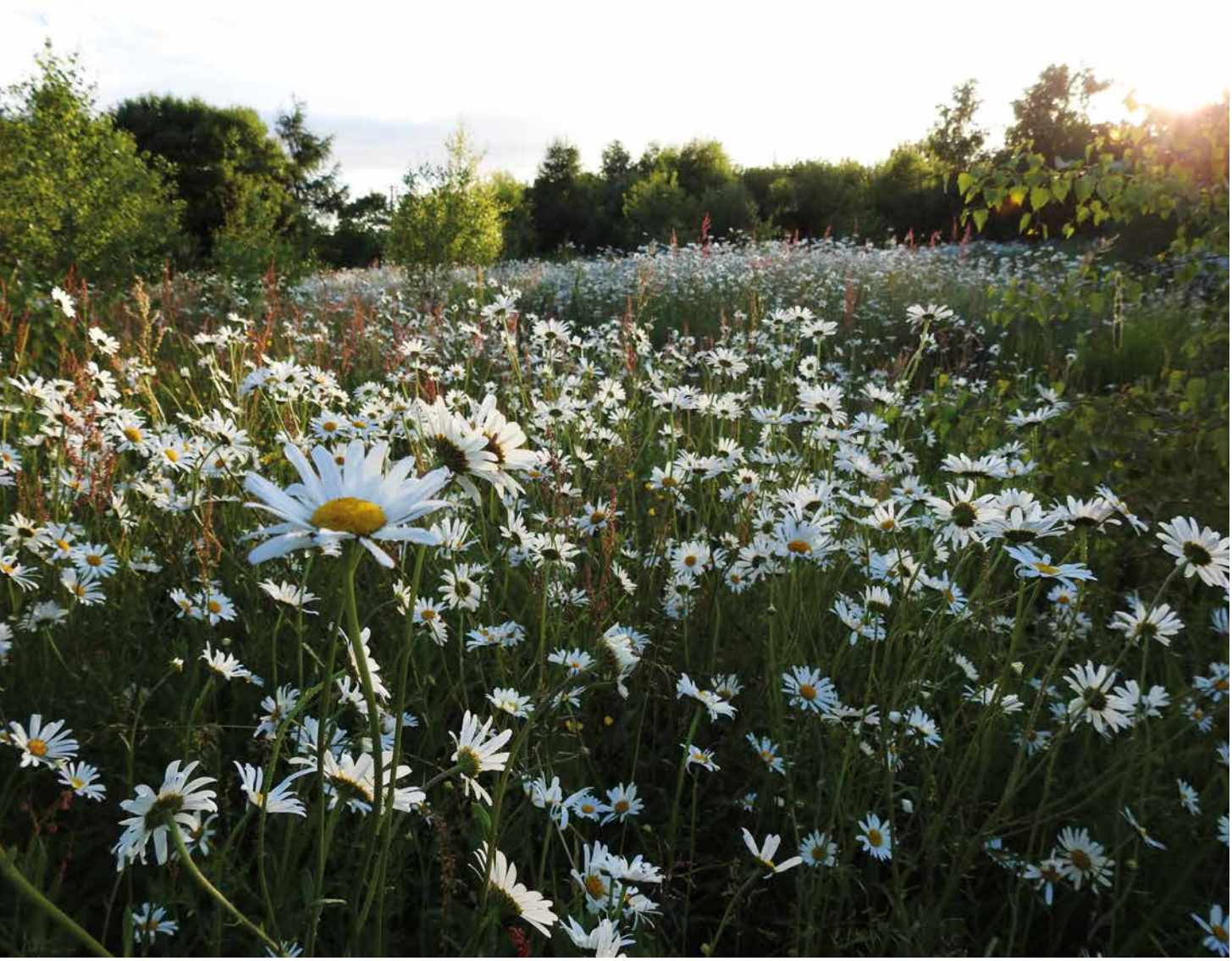

Figure 3. Oxeye daisies (*Leucanthemum vulgare*) and common sorrel (*Rumex acetosain*), Tarbock Green, Merseyside, June 2017. Photo credit: Dan Foy.

and fragmented as this requires high sampling intensities to discern biodiversity trends from natural variability. These types of environment are some of the most common for biodiversity projects as they tend to occur close to human settlements or in geographically complex areas.

Transparency and open data sharing are also challenging and a dilemma for nature-tech because while transparency and open data are essential features to build innovative trusted products, nature-tech start-ups tend to have a culture of 'black box' proprietary models to protect their intellectual property. One of the key suggestions of how to overcome this is to enable technology test beds, through collaboration with the public sector, business and academia. Test beds are used to test start-up technologies and share data and results in a safe collaborative environment before taking products to market. Also, the public sector can help fund and set up innovative pilot projects.

The green finance market is starting to establish itself and market infrastructure is developing. It is a nascent market. The fact that investment is starting to flow in is good news for the environment as well as people. However, there are still significant challenges to be addressed for the market to be scaled up. This is essential if we are to bridge that £550 billion funding gap.

Barriers and solutions

Some of the main issues and barriers include a lack of investible projects, particularly in the Global South, small project values (investors typically seek investments of a particular minimum size) and skills gaps including a lack of financial experience among project developers. There is also a lack of ecological experience on the investor side and underdeveloped market infrastructure, for example an absence of industry-accepted transaction databases and market research platforms. Costs of independent verification and data comparison are high.

Stantec's research, which has included engagement with biodiversity stakeholders working on the ground, suggests there are also some significant ethical issues, with many biodiversity projects not fully considering impacts on local communities and Indigenous Peoples.

That said, there are also many instances where the private sector is forging ahead of public policy. For example, 400 organisations have signed up to the Taskforce on Nature-related Financial Disclosures (TNFD 2024), many others are signing up to Nature Positive Business Pledges. Many businesses are involved in forums such as the UK Business & Biodiversity Forum (www.business-biodiversity.co.uk/).

The potential solutions to address these issues and boost private sector investment are as follows.

- The public sector needs to support the market, correcting market failures to help lever in greater levels of private finance. This includes supporting regulation based on independent, scientifically driven standards. There needs to be support for standardisation of disclosure and guidance standards, providing greater levels of blended finance, (grants and de-risking guarantees) supporting debt-for-nature swaps, funding and supporting test beds and incubators, and supporting floor prices for natural capital.
- The private sector should collaborate to support standardisation of market infrastructure including verification, technologies, market information and transaction sharing. Project aggregation systems and platforms should be developed. The private sector should encourage incentives for holistic projects that benefit biodiversity and communities associated to material nature-related risks.
- Skills and education: upskilling and training should be undertaken for both biodiversity project developers to boost their financial and business understanding, and for the investment community so they have a better understanding of biodiversity and nature.
- Collaboration and communication between the public, private and academic sectors should be enhanced to help build trust and open opportunities for joint working.

Final thoughts

Finally, let's check the proposals set out above against my initial notes of caution.

Is it greenwashing? Well, although greenwashing is always a risk, requiring constant diligence, private sector investment is not greenwashing. This aspect seems to have been minimised, which is partly linked to the current crisis in carbon trading which has seen many bad investments being rooted out. Transparency is key, and scientific verification of nature-tech and regulation will help reduce the risk of greenwashing.

What about local and Indigenous Peoples? This is certainly an area that needs massive improvement. Indigenous Peoples and local communities not only need to be factored into investment decisions, they can also help to deliver and monitor projects.

Will private sector investment ultimately help biodiversity? This is the big unanswered question. Will there be a transition to a green economy? Can the entire market economy be reoriented away from consumption of 'free/ unpriced' resources, towards one that truly values nature? The hope is that if business is invested in nature, and leaders understand nature-related risks, they will care about its outcomes (i.e. following principles set out in the Dasgupta review; Dasgupta 2021). My personal view is that it will be messy, uneven and difficult, but we must remain positive and keep pushing for change – our very survival depends on it.

Hopefully this article provides a useful interpretation of the private green finance market. We need a step change and action to bring biodiversity into the mainstream of our economy. Nature needs to be part of everyday economic decisions because natural capital has been priced in and because improving biodiversity can ultimately generate wealth and well-being.

So, to end with another quote, this time from Charles Dickens, an early observer of the clash between modernity and nature; "This is a world of action, and not for moping and droning in…" (Dickens 1850).

Acknowledgement

This article is based on a green finance study Stantec conducted for the Royal Botanic Gardens, Kew, the Strategic Science Lead for the Global Centre on Biodiversity for Climate (GCBC; www.gcbc.org.uk). GCBC is funded by the UK's Department for Environment, Food and Rural Affairs working in partnership with DAI Global as the Fund Manager Lead and the Royal Botanic Gardens, Kew. This material has been funded by UK International Development Funds; however, the views expressed do not necessarily reflect the UK government's official policies.

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About the Author

George Whalley is a Senior Associate at global design and engineering firm Stantec. He is based in Bristol and is a chartered town planner and economist with over 20 years' experience delivering economic planning studies for public and private sector clients. George recently developed a keen interest in green finance, building on his passion for nature and early career in investment banking.

Contact George at:
George.whalley@stantec.com