

Heavy reliance on private finance alone will not deliver conservation goals

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Accepted for publication in *Nature Ecology & Evolution* (embargoed until 12.06.23 16.00 BST).
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The Kunming-Montreal Global Biodiversity Framework envisages an increasing reliance on large-scale private finance to fund biodiversity targets. We warn that this may pose contradictions in delivering conservation outcomes and propose a critical ongoing role for direct public funding of conservation and public oversight of private nature-related financial mechanisms.

The repeated failure to achieve global biodiversity targets is often attributed to a global biodiversity funding gap¹. Investment in nature is allegedly 5-7 times lower than required to reverse biodiversity loss². A range of financial tools have been designed to incentivise private funds into the delivery of conservation outcomes³, and sustainable finance and policy circles now emphasise the need to ‘mainstream’ these nature-related financial instruments to close the alleged financing gap. Scaling up the investible appeal of nature-related asset classes aims to mobilize financial flows of mainstream institutional investors, including asset managers, pension funds, and insurers^{4,5}. This view explicitly prioritises the financing role of private institutional investors over that of governments, whose role would be more to improve the risk-return characteristics of private biodiversity investments^{2,4-7}. In our view, these policy narratives have underplayed the inherent conflict between achieving ecological outcomes and attracting large-scale financial flows. Here, we argue that successful nature-related investments will require more, rather than less, of a role for the public sector.

The Kunming-Montreal Global Biodiversity Framework (GBF), agreed at the Convention on Biological Diversity’s COP15 in December 2022, embodies an increasing reliance on large-scale private finance. The agreement proposes more ambitious plans for private than for public financing: high-income countries agreed to increase public biodiversity-related spending in low-income countries to USD \$30bn/year by 2030, while ‘mobilising’ at least USD \$200bn/year primarily through ‘leveraging private finance, promoting blended finance... [and] stimulating innovative schemes such as... green bonds, biodiversity offsets and credits’⁸.


There is an important role for well-targeted private market-based mechanisms in addressing some drivers of biodiversity loss⁹ (Figure 1). But sound private investments in ecosystems require both competitive financial returns and effective, truly additional conservation outcomes. Sometimes these aims can be synergistic, such as when well-implemented agroforestry systems improve both food yields and biodiversity outcomes¹⁰. All too often, however, ‘mainstreaming’ runs into two major challenges. First, creating a mechanism for capturing an alleged private willingness to pay for public environmental goods is difficult, given strong incentives for free-riding (reaping benefits whilst imposing costs on others). And second, it is not easy to achieve sufficient market scale, liquidity, and efficiency for these instruments to appeal to institutional investors.


Figure 1. Financial instruments designed to draw private finance into conservation. Nature-related financial mechanisms have multiple overlapping purposes. Some instruments seek to internalise the costs of environmental damages into firms’ decision-making (green). Others aim to facilitate investments in underlying ecosystems and ecological outcomes (orange). Other mechanisms aim to finance business innovation relating to the sustainable use of ecosystem services (yellow). Many of these instruments have overlapping purposes, depicted by colour gradients. Many nature-related financial mechanisms can involve both private and public actors. Some also have a ‘blended’ financing structure where public funds are used to ‘de-risk’ investments so as to attract private involvement.

Instrument	Description ↓	Financing structure →	Private	Public	Blended
Tradeable permits	Regulatory agency sets a limit on overall environmental damages and allocates rights to firms, who can then trade their allocations in the market.		✓	✓	
ESG standards	A set of voluntary standards evaluating the Environmental, Social, and Governance (ESG) conduct of stakeholders, typically used to screen investments.		✓		
Risk disclosure frameworks	A set of voluntary standards enabling stakeholders to identify, measure, manage, and disclose their exposures to nature-related business and financial risks.		✓		
Biodiversity offsets	Payments made by a stakeholder to compensate for damaging impacts on biodiversity resulting from their activities.		✓		
Land-based carbon markets	Payments made by a stakeholder to compensate for their residual GHG emissions, used to support land-based measures to reduce or remove emissions (e.g., reducing deforestation or afforestation).		✓		
Payments for Ecosystem Services	Beneficiaries of environmental goods pay conditionally for actions taken to ensure the provision of those goods. In practice, PES schemes have typically been structured as publicly funded transfer payments to landowners.		✓	✓	
Debt-for-nature swaps	Public debt restructuring transaction in which a portion of debt is forgiven in exchange local investments in conservation initiatives.				✓
Conservation bonds	Debt instruments where proceeds finance development projects that generate a return. Interest payments directly finance conservation activities instead of being paid to investors. If positive conservation impacts are achieved, investors receive a success payment at maturity.				✓
Biodiversity credits	Payments made to a stakeholder to finance actions taken that result in measurable positive outcomes for biodiversity.		✓		
Green bonds or loans	Debt instruments where proceeds are ‘ringfenced’ to funding specified green activities.		✓	✓	
Sustainability-linked bonds/loans	Debt instruments whose attributes (e.g., interest payments) are linked to the achievement of pre-defined sustainability targets. Proceeds are not ringfenced.		✓	✓	

Key

 Internalise costs or risks of environmental damages

 Investments in underlying ecosystems

 Finance transition to green business activities

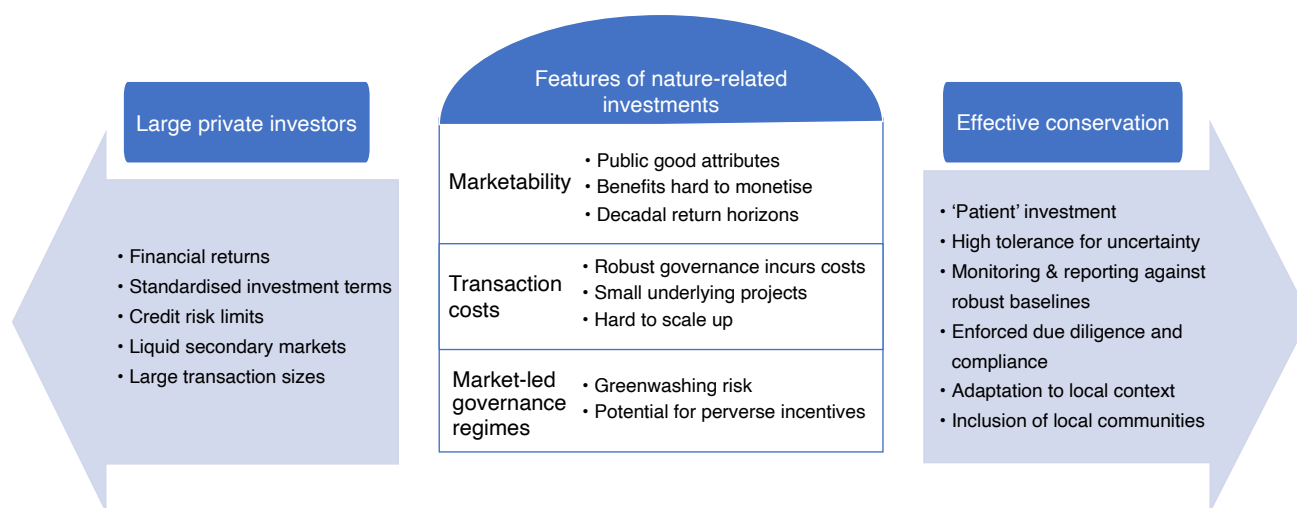
NB. Some tools have overlapping purposes, shown by colour gradients

Given these challenges, successful nature-related investments will arguably require more, rather than less, of a role for the public sector – especially in two key areas. First, we articulate a stronger role for public oversight, such as financial regulation of emerging nature-related asset classes. Second, we explore the economic case for redirecting under-utilised sources of public finance to increase public investment in conservation.

The challenges of ‘mainstreaming’ private conservation finance

Institutional investors face various requirements when choosing where to allocate funds, including competitive returns, diversification, standardised investment terms, credit assurances, liquid secondary markets, and scale (large transaction sizes)⁵. Decades of research and experimentation suggest these conditions are met by very few nature-related assets: the difficult balancing act between environmental additionality and market efficiency currently tends to be tilted towards the latter (Figure 2)¹¹. Numerous barriers to scaling up these financial mechanisms include the small localised characteristics of many conservation projects, and high costs of monitoring, due diligence, and enforcement¹². Moreover, the inherent complexities of nature mean returns are highly uncertain. Benefits typically materialise over decades, whereas mainstream investors conventionally discount long-term returns.

Figure 2. Antagonisms between conservation and financial investor outcomes. The features of nature-related investments place them in a challenging position between meeting the partially conflicting requirements of large-scale private investments on the one hand, and effective conservation delivery on the other hand.



Given these attributes, it has been challenging for conservation projects to achieve the scalability and standardisation required to include them within large-scale investment funds. As such, they have been confined to niche portfolios of ‘impact-focused’ investors^{11,12}. Partial solutions, such as using eDNA and remote-sensing technologies to reduce monitoring costs, or aggregating small projects into portfolios funded via investment funds, are being trialled. Yet environmental impact evaluations document overwhelmingly disappointing results. Many land-based offset programmes, for example, suffer from weak or no additionality^{13–15}. Beyond offset credits, studies evaluating a range of private conservation investments have found systematic underinvestment in the governance required to make a positive difference for nature^{11,16}. Furthermore, ‘no-intervention’ baselines are often inflated: a Bloomberg investigation into over 100 sustainability-linked bonds worth almost €70 billion found that most instruments were linked to targets that are ‘weak, irrelevant, or even already achieved’¹⁷.

Such weak performance occurs when large-scale investors either deliberately target financial returns over ecological outcomes, or get lost in simultaneously addressing multiple, potentially competing objectives. To ensure ecological outcomes, biodiversity markets and conservation-based asset classes thus require robust counterfactuals, and solid mechanisms for reporting, due diligence, and enforced compliance. Yet, other critical trade-offs between market efficiency and conservation delivery remain: effective governance

typically raises transaction costs, but cost-reducing pressures emerge from the need to attract large-scale investors. For offset credits, even buyers may have vested interests to avoid robust monitoring: disclosed non-additionality re-exposes them to ecological liabilities and risks they had hoped to transfer onto third parties.

A proactive governance role for public bodies

The evolution of oversight mechanisms attempting to mitigate this trade-off has been almost exclusively driven by initiatives led by the private sector to self-define standards (for example, environmental, social and governance (ESG) taxonomies or offset accreditation) or to develop risk measurement and disclosure frameworks (such as the Taskforce on Nature-related Financial Disclosures). Some for-profit actors, most notably index providers, have arguably attained ‘de facto’ regulatory power in defining what is deemed worthy of a nature-related investment label. This approach – described as “non-state, market-driven environmental governance”¹⁸ – entails fundamental conflicts of interests, with private finance-led ESG taxonomies in particular plagued by revelations of systemic ‘greenwashing’¹⁹. Indeed, private actors – buyers, sellers, and certifiers alike – may arguably all be subject to simultaneous perverse incentives to overestimate environmental payoffs and underestimate nature-related risks, in order to avoid adverse regulatory or asset-repricing consequences.

Instead, we argue that a more proactive oversight role for public bodies at multiple scales will be needed to enable nature-related asset classes to scale up without compromising on robust ecological outcomes. Indeed, the state has historically played a massive role both in developing the governance architecture for environmental market-like mechanisms, but also as the major direct buyer of environmental services. Lack of public body capacity in monitoring and enforcing has been linked to the poor outcomes of previous biodiversity-related mechanisms²⁰. As governments turn to implementing the post-2020 GBF, emphasis should be placed on appropriately resourcing environment regulatory agencies, enabling them to appropriately scrutinise the activities financed and conduct random site-visits to verify information self-reported by landholders, and ensuring they have sufficient capacity and legal authority to take enforcement action when appropriate.

Some private sector-led initiatives have publicly called for more regulation², and some public regulatory frameworks are emerging, such as the EU sustainable finance taxonomy. However, the extent of corporate lobbying and greenwashing that could undermine such frameworks indicates that a more explicit and coordinated role for public accountability is needed. In practical terms, both environmental agencies and financial regulators should be more formally integrated into private sector-led initiatives. The Network for Greening the Financial System (NGFS) – a body representing over 100 central banks and financial supervisors – has acknowledged the materiality of biodiversity loss to financial stability, hence recognising its relevance to core primary mandates. Financial authorities and environmental agencies should thus provide more oversight and formal collaboration with private standards bodies, not least because greenwashing poses another form of potential financial risk, and many financial regulators also have mandates to protect buyers of financial products from misselling.

More fundamentally, ensuring that private finance supports biodiversity targets is not just about the creation of new investment opportunities; it also requires a rapid reorientation of investment portfolios away from harmful economic activities driving biodiversity loss. Insofar as this effort may conflict in some sectors with investors’ needs to maximise short-term financial returns, a more active role for well-targeted financial regulation may be warranted. Notably, effective public oversight and governance will also need to

continuously draw on interdisciplinary competences, and on well-targeted contributions from civil society, be it from nature-oriented NGOs or advances in environmental research.

The economic case for public conservation funding

Mainstreaming private biodiversity finance is often seen as a pragmatic solution to securing conservation funding given perceived challenges to increasing public spending on nature. One argument is that private finance may avoid the waxing and waning of political interest in biodiversity protection. Yet whilst it is true that political obstacles remain relevant especially in the present economic climate, it is unclear how private markets might provide more stable funding streams. The most developed carbon markets, for instance, have been plagued by volatility and speculation²¹. Another argument highlights limited improvements in biodiversity following decades of public spending. However, underwhelming outcomes from past public programmes may just as much be a result of comparatively small amounts spent: public funds supporting nature are estimated to be five times smaller than public subsidies that are harmful to biodiversity³.

‘Blended finance’ mechanisms are commonly advocated as a realistic solution to some of these issues. Here, public spending is used to ‘de-risk’ conservation projects to mobilize large-scale finance from institutional investors, either by providing upfront returns to private investors or by underwriting and socialising potential future investment losses. It is argued that improving the risk-return characteristics of nature-related investments will enable more conservation projects to be funded than by direct public spending^{2,6,7}.

Yet it is underacknowledged that such ‘de-risking’ may represent an overly expensive use of government investment capacity. Blended finance mechanisms give the appearance of reducing public spending outlays by moving immediate expenditure off government balance sheets, but such financing arrangements are increasingly recognised – including by the International Monetary Fund – to be more costly over the long run^{22,23}. Governments can usually borrow more cheaply than the private sector, and blended finance infrastructure projects typically incur large legal, technical, and consultancy fees. De-risked nature-related investments may incur even larger costs, due to the complexity of crafting new markets out of nature. For example, Belize’s US\$364 million debt-for-nature swap, which used public funds to de-risk private investors in a conservation-linked debt restructuring deal, may cost the Belizean government an additional \$84 million in transaction costs paid mostly to banks and knowledge brokers in the global North – 23% of the deal size²⁴. More policy focus is needed to ensure that blended finance mechanisms for nature represent genuinely cost-effective funding solutions, rather than primarily revenue streams for private actors.

Advocates for private biodiversity markets have also underplayed the benefits of public interventions. It is estimated that the gains in economic welfare from biodiversity protection are likely to outweigh costs of public intervention²⁵. Resilient and effective ecosystems also display the classic characteristics of complex public-goods: they are non-rivalrous (the benefits one person reaps do not prevent others from also benefiting) and non-excludable (difficult to prevent others from benefiting). These aspects of nature are fundamental to social and economic prosperity, yet free-riding abounds at multiple scales. Furthermore, effective ‘beneficiary pays’ strategies, such as payments for ecosystem services, are challenging to implement in practice given the multidimensionality of conservation benefits. Disaggregating ‘bundled’ environmental services from a single area into various markets, such as carbon, watershed and species-protection markets, to sell to private beneficiaries raises logistical concerns over additionality, and little ‘bundling’ has occurred in practice²⁶. This multidimensionality makes a strong case for direct public investment – both to counteract private free-riding and to ensure the provision of bundled ecosystem services. ‘Crowding out’ of private by public investment is unlikely to occur for such complex public goods, given they are poorly provided for by the private sector.

The creation of green jobs may help to generate political legitimacy for increased public spending on conservation. When conservation and restoration projects are shovel-ready and geographically well-distributed in terms of available labour, they may offer high macroeconomic multipliers²⁷. One study focusing on the US found that the nature restoration economy directly employed 126,000 workers and generated \$9.5 billion in annual output, with an additional 95,000 jobs and \$15 billion output generated on an indirect basis²⁸. There is also historical precedent for large-scale public spending on biodiversity-related crises. For example, President Franklin Roosevelt's 'New Deal' in the 1930s included the creation of the Civilian Conservation Corps to tackle the Dust Bowl environmental crisis, employing over 2.5 million to plant over 3 billion trees. As adverse environmental trends increasingly impact on our productive systems today, there have been growing calls for ambitious mission-driven public policy – such as 'Green New Deals' – based upon similar thinking.

Looking ahead to the post-2020 biodiversity finance agenda

Ultimately the primary macroeconomic case for reversing nature loss rests on ensuring the provision of ecosystem functioning that is critical to future economic productivity and resilience. Our point is not that there should be no role for private biodiversity-related finance, nor do we wish to draw a false dichotomy between public and private funding in order to reverse nature loss. Rather, we argue that the aims of the post-2020 GBF might be more quickly and effectively realised through pursuing the right balance of public and private financing solutions, alongside civil society participation and oversight. Future work should explore what kinds of ecological conservation and restoration projects would likely be more cost-effective and ecologically successful to fund through public versus private or blended financing instruments so as to avoid crowding-out effects. Projects with high immediate costs, significant long-term gains, uncertain and hard-to-monetise future benefits may be inherently more suited to public rather than private financing. However, other projects, such as those creating new habitats, may have lower risks of non-additionality, compared to habitat-protecting actions. So, restoration/creation-based systems such as the US's mature wetland mitigation markets may be stronger candidates for private investment, whilst recognising that compliance failures still need to be addressed.

Although public budgets in many countries are under pressure from ongoing global challenges, direct government investment in nature does not have to be financed through debt. As policymakers turn to implementing the post-2020 GBF, one important source of public funds should be the reorientation of public subsidies that are harmful to biodiversity – estimated at around USD 500 billion globally per year according to the OECD³. Public financial institutions are also well placed to scale up nature-based projects, given these investments are in many countries considered to be off government balance sheets, and these banks often have mandates to maximise social rather than financial returns²⁹. Increased debt burdens and climate-related vulnerability severely constrain many low- and middle-income countries in their ability to dedicate sufficient public funds for conservation. Hence, more redistributive mechanisms from the Global North to fund the conservation of biodiverse ecosystems in the Global South are needed, such as via tax justice and debt relief³⁰, in order to counterbalance the increasing ecological footprint from high-income economies.

Competing interests statement: The authors declare no competing interests.

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