

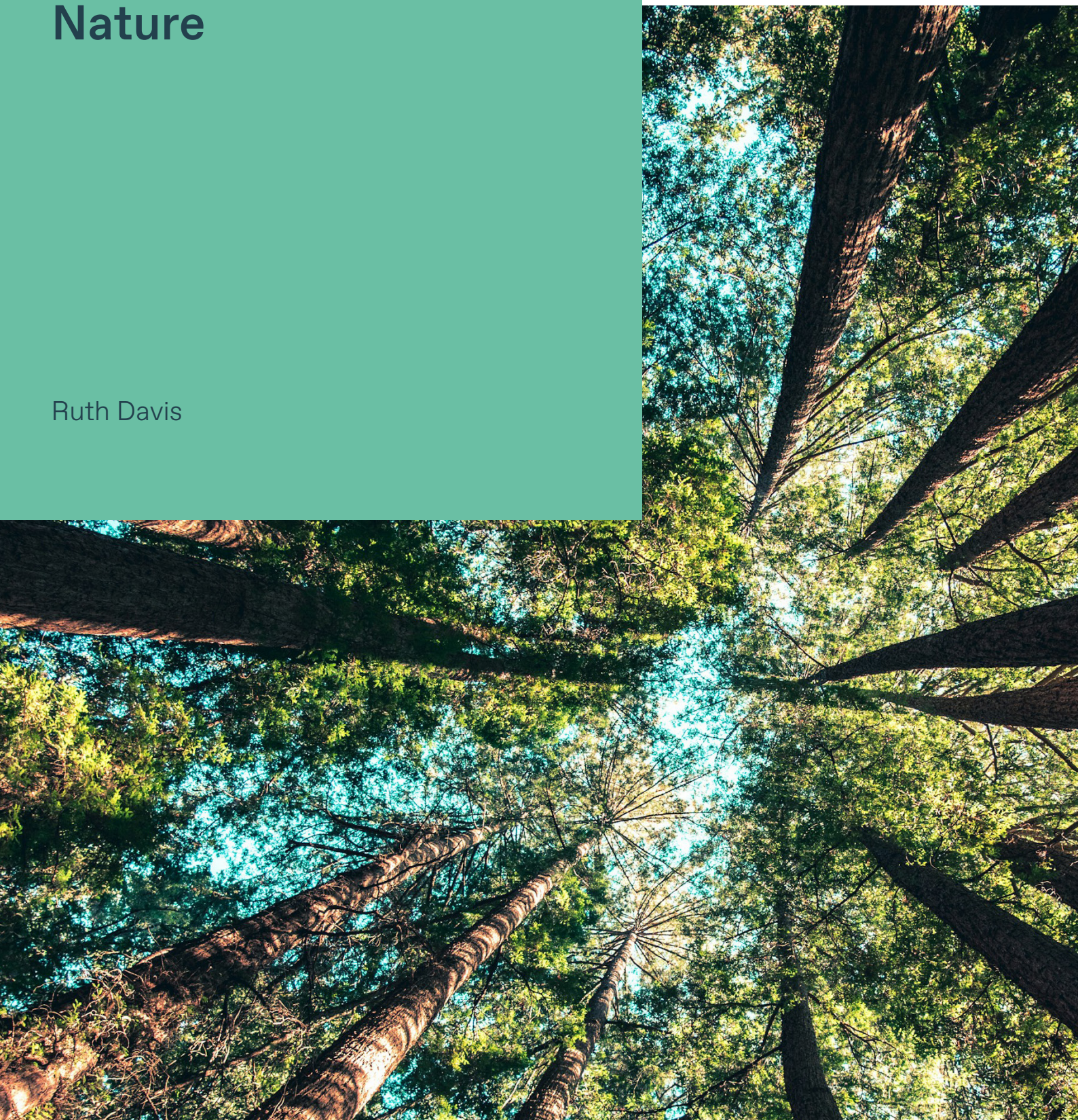
Policy Brief

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**TESS** Forum on Trade,  
Environment,  
& the SDGs

# The Transition to an Economy That Values Nature

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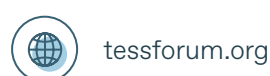
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## Summary

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Healthy ecosystems and thriving biodiversity underpin the stability of the global economy, but their value is not reflected in investment decisions due to sustained market failure. Fundamental reforms are needed to tilt financial incentives away from nature's destruction towards its protection and restoration.

These reforms are increasingly well understood and are being adopted by some governments and institutions, but more effort is needed to champion them in boardrooms and finance ministries; both to ensure that climate-related reforms reflect the importance of nature and to secure new mechanisms to manage nature-specific risks. Governments have a particular responsibility to address subsidies that harm nature, and should do so in ways that advance social as well as environmental outcomes.

Efforts to align finance with the needs of nature must be accompanied by an urgent reduction in the debt burden faced by countries in the global south, and improved access to affordable capital. Policymakers should support governments seeking to reduce their exposure to debt whilst investing in nature, and should mobilize new finance into ecologically beneficial agriculture and fisheries and the wider bioeconomy; in doing so improving the livelihoods of those who depend most upon nature.

Aligning investments with the needs of nature and scaling the bioeconomy are essential steps towards a sustainable future; but achieving these things will take time. To avoid reaching irreversible tipping points in the coming decade, more direct incentives will also be needed to support global south governments (national and local), indigenous peoples, and communities who are struggling to protect nature now.

This means that governments in the global north must promptly meet their public finance targets under the Kunming-Montreal Global Biodiversity Framework (KMGBF). Public finance is essential and irreplaceable.

Official development assistance on its own, however, will not be sufficient to meet the needs of billions of people facing nature loss, development challenges, and climate impacts. New finance sources will be needed, particularly to reach the KMGBF target of \$200 billion from all sources by 2030.

Whilst options for new sources exist, they all face a significant constraint, which is that nature will not provide a "return on investment" in today's economy without significant policy intervention in the form of regulation, tax, de-risking, debt relief, or philanthropy. Since these interventions generally encounter headwinds in finance ministries and boardrooms, they may take time to secure; implying that existing sources of nature finance should also be protected and grown whilst new sources come on board.

This underscores the importance of meeting public finance targets, but it also implies that carbon markets will need to work better for nature in the short-term, given that they are a significant part of today's financing landscape. This in turn requires policymakers to modify "technology neutral" rules to reflect the characteristics of nature: ensuring that high-integrity credits receive a fair price in the best-governed markets.

Ultimately, market finance may be best suited to supporting carbon removals through restoration and reforestation, rather than paying for the protection of ecosystems. But in the short-term, market finance will be needed to reward ecosystem protection and avoid a financial cliff edge, whilst more appropriate and durable economic instruments come on stream for this purpose.

Voluntary carbon markets (VCMs) need to transition away from offsetting claims and towards contributory approaches via an orderly process; whilst compliance markets, including government-to-government deals, regulated sectoral mechanisms, and regional and national emissions trading schemes, should be

designed to generate finance for nature in ways that sustain integrity and deliver meaningful price signals.

Efforts to improve the operation of the carbon markets should not, however, mask the reality that they are imperfectly placed to provide flows of nature finance in the long term. This implies that policymakers should be wary of creating new structural dependencies on voluntary biodiversity markets whilst continuing to support the development of well-designed regulatory mechanisms, for example for biodiversity planning gain.

As the VCMs transition towards contributory approaches, and compliance markets incorporate bespoke mechanisms for funding nature, the nature-related elements of carbon markets may come to resemble payments for ecosystem services (PES) schemes more closely than traditional open trading platforms. This in turn strengthens the case for policymakers to devote more time and attention to scaling up non-market mechanisms, as they seek to expand the number and type of nature finance sources.

Promising options include debt-related instruments, which can offer near-term wins if they are country-driven and provide clear benefits for sustainable development; but which may have limited applicability in some contexts and geographies.

Policymakers should also pay particular attention to two new PES or PES-like schemes that are being discussed on the international stage: a mechanism to raise levies from companies that use digital sequence information, being developed under the Convention on Biological Diversity; and the Brazilian initiative to create a new Tropical Forests Forever Facility, which aims to provide payments for the protection of tropical forests through revenues from a multilateral wealth fund.

If these mechanisms were to start to generate funds at scale over the next two to five years, they could make a significant contribution to filling the nature finance gap. However, the key to success for all of them will be governance: in particular, navigating the need to reduce risks for investors whilst respecting the role of sovereign governments as fund recipients and enhancing direct access to finance for indigenous peoples and local communities.

Above all, the future landscape for nature financing needs be shaped by those who are on the front line of nature protection, so that they can benefit from sustainable and equitable development. This will require donor governments and their stakeholders to be attentive listeners; and finance, development, and environment ministers everywhere to recognize that everyone's economic stability and prosperity rests upon a thriving natural world.

# 1. A Mission for 2030: Reforming Financial Systems to Protect and Restore Nature

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The destruction of forests, wetlands, and other nature-rich habitats is deadly for the world's economy: reducing its resilience to shocks, threatening food security, and costing trillions of dollars. The Dasgupta Review of the economics of biodiversity concluded that damage to nature was costing the global economy around \$2.7 trillion dollars annually: with around half the value of global GDP directly reliant upon nature (Dasgupta, 2021). Underlying these figures are the concrete realities of ecological dependence: for example, the fact that forests generate a significant proportion of the rainfall that sustains agriculturally productive areas in the tropics (Smith et al., 2023); supporting crops that feed billions of people, and affecting the price of food from Lahore to London.

Despite our growing understanding of the value of nature, however, incentives that drive its destruction are built deep into our economies and financial systems. A recent study by Oxford University (2023) identified \$5 trillion dollars' worth of nature-related risks to businesses that are neither recognized nor priced into investment decisions. As a result, tropical forests and other critical ecosystems continue to be worth more cut down than standing, despite their essential role in storing carbon, ameliorating droughts and floods, and supporting food production.

Tackling these problems is not just about “paying for nature” or implementing more individual conservation projects; to create an economy that safeguards and rebuilds the world's natural assets will require fundamental reforms, tilting incentives everywhere towards the protection and restoration of ecosystems and species. This is what is implied in the mission of the Kunming-Montreal Global Biodiversity Framework (KMGBF), adopted by 186 countries at the end of 2023, which seeks to achieve a world in harmony with nature, where “by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem

services, sustaining a healthy planet and delivering benefits essential for all people” (CBD, n.d.-b).

The package of reforms needed to create this fair, thriving, and nature-aligned economy is reasonably well-understood, not least because many of the necessary measures build on actions already being used to align financial flows with climate goals. They include requiring governments, banks, and businesses to disclose the risks they face as a result of nature loss (Park, 2023), and adapting the governance of financial institutions to ensure that they reduce nature-related risks, including by aligning investment policies with the goals and targets of the KMGBF (UNEP Finance Initiative, 2023).

Progress on this agenda would get an immediate boost with relatively low transaction costs, if governments and the private sector were to recognize and act more promptly on those aspects of the climate transition that require action to protect and restore nature; for example, fully integrating goals to halt and reverse deforestation into investment rules and tackling land-based emissions through net-zero planning.

However, since not all action for nature will be captured through this route, regulators and standards setters will also need to develop nature-specific instruments that reflect the full range of nature-dependencies in modern economies. Some governments and financial institutions are already taking steps in this direction; for example, the Task Force on Nature-related Financial Disclosures is developing the measures needed to make nature-related risks visible to investors; and the Network for Greening the Financial System has produced guidance for Central Banks and Supervisors to help them assess nature-related financial risks (NGFS, n.d.). Many multilateral and regional development banks are also working towards nature-aligned investments, with some—for example the IDB (2023)—introducing incentives for governments meeting climate and nature targets.

One area of action that is critical to achieving climate and nature goals is to ensure that subsidies, particularly in the agriculture and fisheries sectors, are not driving environmental damage, but are instead helping to build fairer and more sustainable food systems. OECD (2023) analysis of 54 countries estimated the size of agricultural subsidies at \$630 billion a year between 2013 and 2018, growing to \$851 billion in 2020–2022; a report by the FAO, UNDP, and UNEP (2021) meanwhile concluded that 87% of agricultural subsidies are price distorting and/or are driving harms to nature and health.

Reforming harmful subsidies is a heavy lift for many governments because subsidies have a material impact on farm and fishing incomes, supply chain profits, and food prices; and any changes to them are often felt disproportionately (whether negatively or positively) by poorer producers and consumers. However, with the right policy design, this is also an area where national governments can improve social and environmental outcomes, for example by decoupling farm payments from inputs and production, and empowering farmers to identify and adopt practices and that will help them adapt to climate impacts, whilst also protecting and restoring soils and nature. Whilst progress in this area has been slow to date, there is now a committed set of policymakers who are collaborating internationally to

speed up progress, and a body of knowledge to call upon (Bellmann, 2019). Priorities include involving farmers and fishing communities in the design of modified schemes; ensuring that the distributional effects of reforms are well understood and that choices deliver better social outcomes; combining reforms with efforts to boost local markets for sustainably produced food; and introducing flanking policies to ensure that profits across food supply chains are fairly distributed, particularly to primary producers.

If policies to align financial flows with the needs of nature, including subsidy reforms, were adopted more systematically by governments, banks, and business, they could help pivot an estimated \$7 trillion of capital annually away from activities that damage ecosystems, towards those that restore them (UNEP, 2023). But to achieve this, the community of practice working to secure these results needs to become more diverse, vocal, and connected; giving greater space and attention to the views of governments, investors, businesses, and communities from nature-rich countries in the global south; and ensuring that influential conservation advocates from the global north give as much attention to achieving fundamental structural reforms as they do to securing project finance.

## 2. Building a Positive Alternative: Unlocking New Resources and Building the Bioeconomy

Aligning existing financial flows with the needs of nature is vital to building a genuinely resilient economy: but this needs to happen alongside an urgent plan to reduce the debt exposure of countries in the global south (Moore, 2024); enabling them to meet ongoing development challenges whilst adapting to the impacts of climate change. Without these measures, the space for sustainable development in many countries will continue to shrink (Hurley & Martin, 2023), leaving governments and people with fewer options, including fewer resources to invest in the protection and restoration of nature.

On the other hand, where governments in the global south are being supported to restructure, reduce, or cancel debt, some may wish to use these arrangements to allow more investments in nature, including in ecosystem-based adaptation. This option is one of a suite of mechanisms that could expand near-term incentives for conservation, which are discussed in more detail below.

Tackling debt will help to create the fiscal space needed for sustainable development: but governments and

businesses in the global south also need access to new, affordable capital, not least so that they can participate fully in the economic opportunities associated with low-carbon, resource-efficient and nature-aligned technologies and production systems.

These opportunities are often envisaged and described mainly in terms of clean energy: but they also encompass many other sectors, including investments in sustainable agriculture and fisheries, and in the wider bioeconomy (FAO, 2021): a term used to cover those parts of the economy that make most direct use of biological resources and biotechnologies, such as products harvested from forests and other ecosystems; materials and processes that help build circular economies; and medicines derived from plants, animals, and their genetic codes.

The bioeconomy is already estimated to be worth \$4 trillion globally (Freemont et al., 2024): if it were to grow within clear environmental limits, and if its benefits were to be shared fairly with those who live in and protect ecosystems, it could materially boost prosperity in nature-rich regions and countries whilst helping to protect nature. Brazil (through its G20 presidency) is currently encouraging major economies to agree on a common set of principles around the bioeconomy, to help de-risk investments and unlock flows of capital into new and sustainable technologies and businesses (CPI, 2024).

Ensuring that these principles are underpinned by a strong commitment to protect and restore biodiversity, and to respect the rights of indigenous peoples and local communities, would send a strong signal that the bioeconomy has a thriving future.

### 3. Making Incentives Work Now: Sustaining and Growing Direct Nature Finance in a Critical Decade

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A nature-aligned financial system and a scaled-up bioeconomy have the potential to become the foundation stones of an economy that works in harmony with nature. However, it is also true that achieving these things will take time. And time is in short supply for nature, because despite the efforts of many, biodiversity loss continues apace. The World Wide Fund for Nature's Living Planet Report of 2022 estimates a 69% average loss in the abundance of mammal, bird, reptile, fish and amphibian species since 1970, with 85% of wetlands gone and tropical forests in many places facing irreversible tipping points in the next decade (WWF, 2022).

It is because of this looming risk of irreversible losses that—as well as championing fundamental economic reforms—the global community must also provide direct financial support to those working to save nature now. Specifically, long-promised offers of scaled-up nature

finance that specifically rewards countries, jurisdictions, and communities for protecting and restoring ecosystems must be realized in the next five years; including in places where the threat of tipping points is most acute and where communities are under most pressure: providing hope, time, and options for those on the front line of nature loss.

A baseline for these direct incentives is provided by the financial targets under the KMGBF; which require international financial flows of nature finance to developing countries to reach \$20 billion a year by 2025 and \$30 billion a year by 2030; and finance from all sources to reach \$200 billion annually by 2030 (CDB, n.d.-a). Meeting the first of these milestones in 2025 means that richer countries must double the international finance currently on offer for nature (Nature Finance Info, n.d.). If this does not happen, trust in the value of international agreements will be undermined,



and the chances of halting and reversing declines in nature will be significantly reduced.

But even if governments succeed in meeting the first target of \$20 billion by 2025, there will still be a massive gap between this and the overarching target of \$200 billion by 2030: and a visible insufficiency of support for nature-rich countries struggling to protect and restore biodiversity in the poorer parts of the world.

To give some perspective on what this means for a mega-diverse country in the global south, we can consider the situation of the Democratic Republic of Congo (DRC) (Aruna et al., 2023). The DRC is home to the world's second largest rainforest, covering 145 million hectares and storing the equivalent of 85 billion tonnes of carbon dioxide. But with one of the lowest per capita incomes in the world, some of the lowest agricultural productivity, and a government budget of less than \$11 billion a year, the DRC is also struggling with huge development challenges. In this context, DRC ministers recently signalled their intent to allow oil and gas extraction from beneath the country's tropical forests and peatlands, with an estimated minimum value of \$650 billion. In contrast, the international finance so far available for the protection of DRC's forests amounts to around \$300 million in total.

Direct nature finance alone clearly cannot fill the whole of this gap: instead, fundamental reforms are needed that will reduce perverse incentives, increase the value of the sustainable economy, and provide the government and people of the DRC with new opportunities to tackle poverty through development. Nor is the answer exclusively about finance from overseas, because as DRC campaigners point out, the long-term future of the country also rests on the health of its natural environment (Shaner & Mirindi, 2023). But direct finance from the international community must also grow to a scale that offers a more meaningful incentive for action, otherwise any package of reforms may come too late. This means that public finance targets, including under the Convention on Biological Diversity (CBD), need to be met quickly. But it also means that the existing public finance "pot" will have to be supplemented significantly,

if it is going to provide short-term incentives at a credible scale.

There is a range of ways in which this could happen; but one stubborn constraint will affect them all and must be addressed honestly, if the global community is to secure new sources of nature finance. This is simply that, in the great majority of cases, the protection of ecosystems per se will not yield a meaningful financial return on investment without intervention by the state (López Portillo Purata et al., 2022). Or to put it more simply: as it stands, the world's natural assets are both of profound importance to the global economy, and worth very little on the open market; particularly the "stocks" of natural capital represented by standing forests and other intact ecosystems.

This is in marked contrast to the economics of renewable energy—where, whilst temporary state intervention might be needed to drive innovation or level the playing field ahead of cost reductions, there is an underlying expectation that clean technologies will eventually out-compete fossil fuels on their own terms; in doing so meeting endogenous demands for power, fuel, or heating.

Without a comparable endogenous demand for nature, the options for generating direct finance for nature are limited. They include taxation or borrowing by governments; the creation of regulated markets or mandated levies to secure new private finance; enhanced corporate or individual giving (either as pure philanthropy, or in exchange for reputational gain); debt forgiveness or restructuring; and/or the use of government, sovereign, or other assets to underwrite/de-risk other forms of borrowing or investment.

If we take a cold hard look at all these options, it should be obvious that each of them is likely to require some sustained heavy lifting (both political and analytical) to overcome headwinds in finance ministries and boardrooms; and that they may also need to go through testing and pilot phases before they can be brought to scale. It also seems unlikely that policy makers and CEOs will alight on a single "silver bullet" finance source

that is acceptable in multiple ministries and boardrooms at once: meaning that success might involve a range of approaches that work at different scales and in different geographies, rather than a single, cover-all option.

This is a slightly sobering reality, but it is not a reason to give up: rather, it means that nature advocates must work harder to design and support smart solutions for new finance and to create the political space needed

for their adoption. Some of the most promising options are discussed below, but before turning to these, there is one other important implication of this analysis: if new sources of finance will take time to come on board, we cannot afford to neglect or dismiss existing finance sources, if we want to avoid a financial cliff edge at precisely the moment when critical ecosystems are facing tipping points.

## 4. Building a Positive Alternative: Unlocking New Resources and Building the Bioeconomy

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One inference of this is that it becomes more important than ever for countries to meet their public finance pledges promptly; rather than hedging around in the hope that new sources will come online quickly and reduce their liabilities. But it should also encourage advocates and campaigners to reappraise, soberly, the thorny question of nature-based solutions in the carbon markets: because like it or not, these markets are a part of the contemporary nature finance landscape.

The total value of carbon markets globally (compliance and voluntary) was estimated to be \$948.75 billion in 2023 (Twidale, 2024), with the overwhelming majority of this value coming from the compliance markets, and the bulk of the compliance market value coming from the EU Emissions Trading System. At present, nature-related credits do not make up a significant part of this total, because they have not traditionally played a large part in the compliance markets. They do, however, play a proportionately larger role in the (relatively small) voluntary carbon markets; and recent developments in government-to-government trades, sectoral offsetting mechanisms, and regional and national emissions trading schemes suggest that their role in compliance systems may also be expanding or about to expand.

To illustrate the point: whilst government-to-government deals under Article 6 of the Paris

Agreement got off to a slow start, there are now 130 bilateral pre-feasibility projects up and running (Vaughan & Di Leva, 2023); with Suriname announcing that it will become the first country to sell forestry-based internationally transferred mitigation outcomes (ITMOS) (Spring, 2023); and new offers to buy nature-based credits anticipated from Singapore and others. Meanwhile, 36 jurisdictions have their own compliance markets in place (ICAP, 2024), with some already trading in nature-based credits, and others, including Brazil, intending to include nature-related credits in some form in their schemes (Sandy & Horta, 2024). Meanwhile, CORSIA (the offsetting mechanism for the aviation sector) is also looking to support nature-related activities, with the ART Trees Forest standard one of a small number already recognized by the scheme's administrators; suggesting that there could be a significant uptick in demand for these credits (Holder, 2024). All this is happening alongside the troubled evolution of voluntary carbon markets (VCMs), whose value has fluctuated in recent years, falling from an estimated \$2 billion in 2021 to less than \$1 billion in 2023 (L, 2024), but which still support a significant volume of trading in nature-based solutions.

Taken in the round, this points to a carbon market system which may be flawed but is nonetheless

operating at a meaningful scale, and where the use of nature-related credits is likely to expand to new geographies and sectors. What is more, policymakers from rich countries have consistently positioned carbon markets as the major source of nature finance for the developing world (Climate Champions, 2022): in doing so raising the (not unreasonable) expectation that the rules governing such markets will enable, rather than impede, large-scale trading in nature-based solutions. No wonder, then, that many governments in the global south are now looking on in some consternation, as some of the same ministers, officials, and experts who argue that carbon markets *should* provide finance for nature simultaneously insist on market rules under Article 6 that do not recognize its unique characteristics and as a result disadvantage its protection and restoration; and when public critiques of the carbon markets repeatedly (and with justification) focus on the pitfalls of poor integrity nature-based credits (Greenfield, 2023), but do not come forward with concrete and practical proposals to ensure that new finance reaches those trying to protect the world's remaining (and irreplaceable) tropical forests.

Because of these mixed signals, many investors with an eye on reputational risk are getting cold feet about the use of nature-based credits in the VCMs (S&P Global, 2024); whilst those attempting to generate high quality credits are hard-pressed to be confident about where they can sell their products at a fair price with appropriate safeguards; whilst all the while, less accountable intermediaries continue to pursue them with gusto (Mukpo, 2023); putting governments and communities at the mercy of “sub-prime” transactions, when they should benefit from the prices, transparency, and safeguards associated with the best governed schemes.

This is not a tolerable situation: nature-rich countries need clarity on where new finance is coming from; and if the answer *is* to be the carbon markets (at least in part), they need consistent rules that enable their products to command a fair price, and to benefit from good governance. Since the argument made

in this paper is that we *do* need the markets to work until we have alternatives up and running, it follows that policymakers must now directly address the current crisis by proposing schemes and rules that deliver explicitly for nature. But to achieve any level of consensus around this, we must first acknowledge how finely balanced the arguments are in favour and against including nature in the markets at all; and be clear about why, although they may represent a short-term necessity, they do not offer a long-term solution for nature finance.

Critics of the markets *can* point to the difficulty of designing market rules that guarantee carbon savings from nature-related activities (Carbon Market Watch, 2020); and to the danger of allowing nature to become a greenwashing platform for fossil fuel interests. They also rightly point out that rapid decarbonization should lead to a steep decline in revenues from carbon trading, creating a financial cliff-edge that could amplify risks to nature in the medium term. Market advocates, meanwhile, can argue with equal justification that they provide a practical way to leverage large financial transfers towards nature (Seymour, 2020), in a context where other solutions are either immature or politically unpalatable; and that in doing so they fulfil a core part of the original purpose of carbon markets, which is to raise money for activities that might otherwise give no return on investment.

So balanced is the issue, that thoughtful people on both sides of the argument not only recognize the validity of each other's positions, but often feel close to holding both views at the same time. And whilst this condition might be uncomfortable, it does suggest there is room for compromise—particularly if those involved can agree (as this paper argues) that carbon markets are *not* the ideal solution for funding nature in the long term; but that we cannot afford to turn our back on them as a source of nature finance in the near term.

With this premise in place, market critics and advocates might then agree jointly to promote rules

that explicitly recognize the special characteristics of nature-based solutions, rather than treating them as identical to other kinds of credits. This is necessary because technology-neutral rules, when rigorously applied, *do* discriminate against nature—in particular the protection of ecosystems like tropical forests—in ways that are a feature rather than a bug of these approaches. There is no great mystery behind this: it simply *is* difficult to guarantee the “permanence” of a forest over the same time period that one might guarantee the lifespan of engineering project (Ruseva et al., 2020), and it *is* hard to demonstrate that individual actions to protect forests always result in “additional” carbon savings (Downey, 2022), given the complexity of establishing baselines and assessing leakage. Taken together, these factors mean that generic carbon market rules favour emissions reductions from energy systems over nature-based solutions; and within nature-based solutions, they favour emissions *removals* achieved by reforestation, over *avoided* emissions achieved by reducing deforestation. Finally, they struggle to account, at all, for actions that keep forests standing once deforestation has levelled out or where it has always been low, because they are designed to measure changes in flows of greenhouse gases, rather than protect the “stocks” of carbon already locked up in biological systems.

Market sceptics may argue that these problems are precisely why nature-related carbon credits should not be widely traded: and why at the very least they should focus on carbon removals, rather than on the protection of ecosystems. And it is certainly true that in the medium term there is a strong case for building a nature finance landscape in which market instruments focus on restoration and reforestation, whilst other mechanisms (like the Tropical Forests Forever Facility (TFFF)—see below) are used to reward countries and communities that protect standing forests. But as we have seen, the bigger picture is that to have a hope of meeting global temperature goals and halting biodiversity loss, we need to protect large areas of intact forests now: and we need

carbon markets to generate at least some reliable short-to-medium term finance to help this happen whilst other instruments come on stream. Moreover, whilst ecosystems have *do* have characteristics that challenge generic permanence and additionality rules, they also provide benefits that are not currently accounted under these rules: for example, tropical forests provide up to 50% more global cooling on top of carbon sequestration and storage, through biophysical processes that affect transfers of energy and moisture in the atmosphere (Seymour et al., 2022); benefits which could be recognized by taking a more explicit “nature sensitive” approach to scheme design.

Such an approach would make the markets more transparent and effective by enabling both the challenges and upsides of nature-based solutions to be recognized and managed, whilst creating pathways for the highest-integrity credits to be funded through the best governed schemes. Article 6 of the Paris Agreement could, for example, be adapted to ensure that countries and states participating in jurisdictional UNFCCC REDD+ programmes have a well-governed route to secure near-term market finance, using credits backed by credible standards; supporting them as other mechanisms such as the TFFF build to scale. Article 6 could also adopt rules for restoration and reforestation that incorporate safeguards and are aligned with the KMGBF target to restore 30% of degraded ecosystems by 2030.

With these signals in place, high-integrity jurisdictional REDD+ and nature restoration credits might (finally) displace low-integrity avoided deforestation and tree-planting credits in the VCMs, as these markets transition away from offsetting and towards contributory approaches (see below). High quality credits could also play a clear role in regulated sectoral mechanisms for hard-to-abate sectors such as aviation and heavy industry. Government-to-government deals under Article 6 could adopt a similar approach, freeing up official development assistance spending to be directed towards areas where REDD+ is immature and/or difficult to implement, and where

long-term investments in capacity building and forest-positive development are a better fit for national circumstances. Finally, within this landscape, specific emergency provisions could be made for investments in jurisdictions with historically low deforestation rates (ART, 2022), recognizing that whilst they do not offer additional savings through avoided emissions, they do sequester carbon on a continuing basis, and provide supplementary non-carbon cooling benefits; paving the way for the point at which more appropriate instruments are in place to reward forest protection.

These options are workable, but none of them are perfect. Because it remains true that if your objective is to design a market where additional and permanent emissions savings are guaranteed, this is made more complex by the inclusion of nature-based solutions, in particular the protection of intact ecosystems. This is a matter of practical reality rather than political perspective: and something that it is neither possible nor desirable to wish away. It is also something that is felt acutely when nature-based credits are used in the VCMs to justify net zero or carbon neutrality claims from polluting companies (SourceMaterial, 2021). Campaigners—and increasingly regulators (Kaminski, 2023)—are deeply sceptical of the validity of such claims, which is why many observers are now championing a move towards “contributory” approaches (SustainableViews, 2023), in which a financial contribution towards mitigation is recognized but not claimed as an offset. This move seems both inevitable and necessary: but in many cases, it was precisely the right to make a net-zero claim that persuaded boardrooms to participate in voluntary markets in the first place; meaning that a careful transition away from such claims will be needed (which is timely and irreversible) but does not precipitously cut off much-needed climate finance in an already difficult fiscal environment. In an ideal world, this transition would see fossil fuel companies

required (not requested) to make beyond-value-chain mitigation contributions as part of their net-zero plans: finally applying the “polluter pays” principle in a rational way.

Funding nature-based solutions through modified compliance markets may yet prove to be a more viable option than relying on the structure of the VCMs, not least because compliance markets can be more tightly controlled by regulators. The use of nature-based solutions within emissions trading schemes carries its own distinct challenges, however, including the risk that large volumes of nature-related credits will undermine overall mitigation ambition and essential price signals. This issue is not insuperable, however, if governments are willing to adopt scheme designs that directly address and limit the risks, whilst still raising much-needed finance for nature: including (for example) placing tight restrictions on the type and number of nature-related credits available to trade; requiring polluting companies to purchase a certain (capped) number of high-quality nature credits from specified pools or accredited schemes; applying a levy on market transactions to support nature; or simply hypothecating a portion of auction revenues to pay for nature-based mitigation.

Whatever the preferred solution, however, the irony of this direction of travel, both for voluntary and compliance markets, should not be lost on policymakers: because when we ask boardrooms to move away from offsetting and towards contributions, and we advise governments to avoid unrestricted trading in nature-based solutions in favour of bespoke and ring-fenced approaches, what we are really saying is that carbon markets are not a great fit for nature; and that although the world may need them to work now, we also need them to evolve to look more like taxes and levies, and less like the kinds of open trading platforms favoured by liberal economists.

## 5. Beyond the Markets: What Next for Direct Finance for Nature?

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If this kind of evolution happens, it may ultimately result in today's carbon markets resembling tomorrow's "innovative finance solutions"—realizing the dream of many market-sceptical campaigners. But whilst this change gets underway, other options are emerging outside the markets that merit at least as much attention from policymakers, and which could—if they become operational over the next two to five years—spring the trap of our current over-dependence on market solutions.

The final part of this paper will look in more detail at the most prominent of these options, but first we should briefly reflect on what our historical overconfidence in the voluntary carbon markets tells us about the viability of another possible solution: the sale of voluntary biodiversity credits, whose value is linked to habitats and species rather than carbon (The Biodiversity Consultancy, 2022).

The accounting practices that could underlie the sale of such credits are currently under discussion, as are the types of claims that would accompany them. But lessons learnt from the carbon markets suggest that we should be cautious about relying on them to fill the nature finance gap (Compensate Foundation, 2023). Because whilst their advocates are careful to distinguish "biodiversity credits" from offsetting mechanisms (which they know will attract criticism from civil society and regulators), simply replacing an offsetting claim with a vaguer but challengeable "nature positive" claim is unlikely to overcome public opposition: whilst reverting to a "contribution only" claim is effectively asking boardrooms sign up to a major increase in corporate philanthropy. Put more simply: when many companies are facing headaches and headwinds from their involvement with nature in the VCMs, why should they double down on their trouble via voluntary biodiversity credits? And if, instead of getting an offsetting or nature-positive claim for their money, they

only get the warm glow of a contribution, why should they pay up?

None of this is to say that some finance cannot be raised through voluntary biodiversity markets, particularly for conservation groups seeking support for projects. Nor should a healthy scepticism about voluntary biodiversity markets undermine policy support for well-designed compliance schemes such as "net gain" measures applied to development (Natural England, 2024), or trading schemes used to reduce water pollution; both of which have the potential to raise significant domestic revenues for nature and can be supported through international cooperation on standards for accounting, safeguards, local participation, and benefit sharing. But analysis of the carbon markets *should* make policymakers wary of relying on voluntary biodiversity markets as a substitute for other sources of international nature finance, some of which are either working now or have a better chance of reaching scale in a timely and defensible way.

Perhaps the most talked about nature finance option beyond the markets involves expanding "debt-for-nature" agreements, under which governments are supported with debt restructuring, relief, or forgiveness to release new investments into nature in their territories. If these schemes are driven by governments in biodiverse countries and if (in particular) they contribute to tackling climate impacts and improving local livelihoods, they can offer immediate win/wins; and there is certainly scope for more such agreements to emerge in the current context. Estimates vary around the scale of money that could be raised, with the IIED (2024) suggesting that around \$100 billion is potentially available for action on climate and nature in 49 highly indebted countries. Others, however, remain more sceptical about the wide applicability and scalability of such instruments (Padin-Dujon, 2023); particularly given that they depend on indebted governments being

willing and able to reach complex agreements with one or more nature-motivated creditor(s); circumstances which whilst they may not be unique, are certainly not universal, and could exclude many biodiverse countries with urgent finance needs.

Whilst debt-for-nature arrangements may thus have an enhanced role to play in the short-term, they are not a panacea, and will certainly need to be supplemented (and ultimately displaced) by schemes with greater reach, scalability, and longevity: including alternatives based on the principle of “payments for ecosystem services” (PES), under which those who benefit from nature’s services are required to contribute regularly towards its protection and restoration (Department for Environment, Food & Rural Affairs, 2013). Historically, most PES schemes have been implemented regionally or nationally (Mamedes et al., 2023); but there are now two live international discussions around PES or PES-like schemes which deserve careful attention from policymakers and campaigners.

The first is taking place under the Convention on Biological Diversity (CBD) and involves applying a levy to the corporate users of digital sequence information (DSI) (Hennicke, 2023)—the genetic codes that drive much of the innovation in modern medicine and have their origins in the biological world. At its simplest, this scheme would see national governments in developed countries collect money from corporate DSI-users in their own territories, with the resulting funds going to support conservation action in developing countries: ideally through direct access for indigenous peoples and local communities. The scheme is being negotiated under a UN convention, meaning that if governments do sign up to a firm commitment to introduce domestic legislation within a given time frame, there is a reasonable chance they will do so. However, it would be naïve to underestimate the level of resistance to such an outcome in at least some G7 finance ministries

and boardrooms; meaning that public pressure will be needed to secure a mechanism that can generate reliable finance in meaningful quantities from a sufficiently wide range of sectors and products. A strong DSI agreement would not fill the nature finance gap on its own, but it would make a useful contribution to a more diverse funding landscape, and also establish an important principle around global PES that could be expanded to cover other sectors, for example the small number of highly profitable companies that dominate the trade in agricultural commodities (Murphy et al., 2012).

The second option under discussion by governments also offers some interesting precedents for funding nature. The Tropical Forests Forever Facility is a Brazilian proposal that takes a bold but simple conceptual leap—moving beyond payments for individual ecosystem services towards a holistic, long-term support mechanism for tropical forest protection (Reuters, 2023). The scheme deals elegantly with the “no return on investment” problem by proposing that finance is generated through a large trust fund, with a part of the revenue recycled back to forest country governments in exchange for each hectare of forest they retain on their territories. Initial capital would (in theory) come from governments and/or sovereign wealth funds in the form of loans or guarantees, in turn attracting a significant amount of investment from the private sector. This paper is not the place to attempt to describe or assess the scheme’s design in detail, and it will no doubt go through many iterations before it does (or does not) become a reality; but the serious intent of the Brazilian government and its partners in working up the TFFF, and in testing its financial and governance models, must now be met with equally constructive engagement from finance ministers, investors, and civil society, whilst avoiding overloading the scheme with expectations that it can solve the nature finance dilemma all on its own.

## 6. Governance and a New Diplomacy: The Next Frontiers

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This brings us to the critical question of how best to ensure that the governance structures put in place for disbursing nature finance are equitable, effective, and transparent, in what are often complex operating environments involving multiple potential beneficiaries. These issues could (and should) be subject of a whole separate paper—but they also deserve special reference here, because their resolution will ultimately determine how much nature finance can be raised, and the extent to which this finance contributes to sustainable development; in doing so helping to create the long-term conditions needed to protect and restore nature for the future.

At least three factors play into the ongoing politics of governance, all of which need to be acknowledged by the nature finance community as it seeks to shape future international funding arrangements. Firstly, if investments are being sought from national governments, sovereign wealth funds, and the private sector, these investors will seek out governance arrangements that manage operational and reputational risks; often leaning into known institutions like development banks and large conservation NGOs as intermediaries. Secondly, because there is incontrovertible evidence to show that respecting the rights and agency of indigenous peoples and local communities results in better outcomes for nature (Recio & Hestad, 2022), there is an ethical and practical imperative to give these groups more direct access to finance—implying the use of fewer intermediaries. And thirdly, global south governments can legitimately argue that they, as the negotiating and contracting partners to multilateral agreements, should be the primary recipients of schemes that reward

ecosystem service provision on a territorial basis, such as the TFFF. Reconciling these perspectives should not, of course, be impossible, particularly given the strength of the evidence around the effectiveness of community-drive conservation: but finding the right structures to balance these interests in a wide range of different regional, national, and local circumstances is challenging, and will require patience and compromise.

Above all, however, these issues point to the need for a diplomatic sea change, in which mega-diverse country governments and indigenous peoples (including in tropical forest countries) initiate, propose, and design finance solutions that work for them and their citizens, rather than simply being asked to respond to (and accept) solutions conceived and designed outside of their territories. This change is starting to happen, incubated in the CBD and supported by the Brazilian government's ongoing diplomacy ahead of the 2025 UN Climate Change Conference (COP30): but it needs to be met with constructive and attentive listening by governments and civil society organizations that have traditionally played the role of donors and charities; including considering how direct cash payments can reduce the role of intermediaries and boost the agency and capacity of local people. Ultimately, if this new dynamic is allowed to flourish, it could enable all of us to move beyond an aid and philanthropy-based model of nature finance, to one in which governments and businesses contribute towards the protection and restoration of healthy ecosystems, based on a shared responsibility for systems upon which we all depend: and where those who live and work in nature benefit directly from its protection and sustainable use.



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