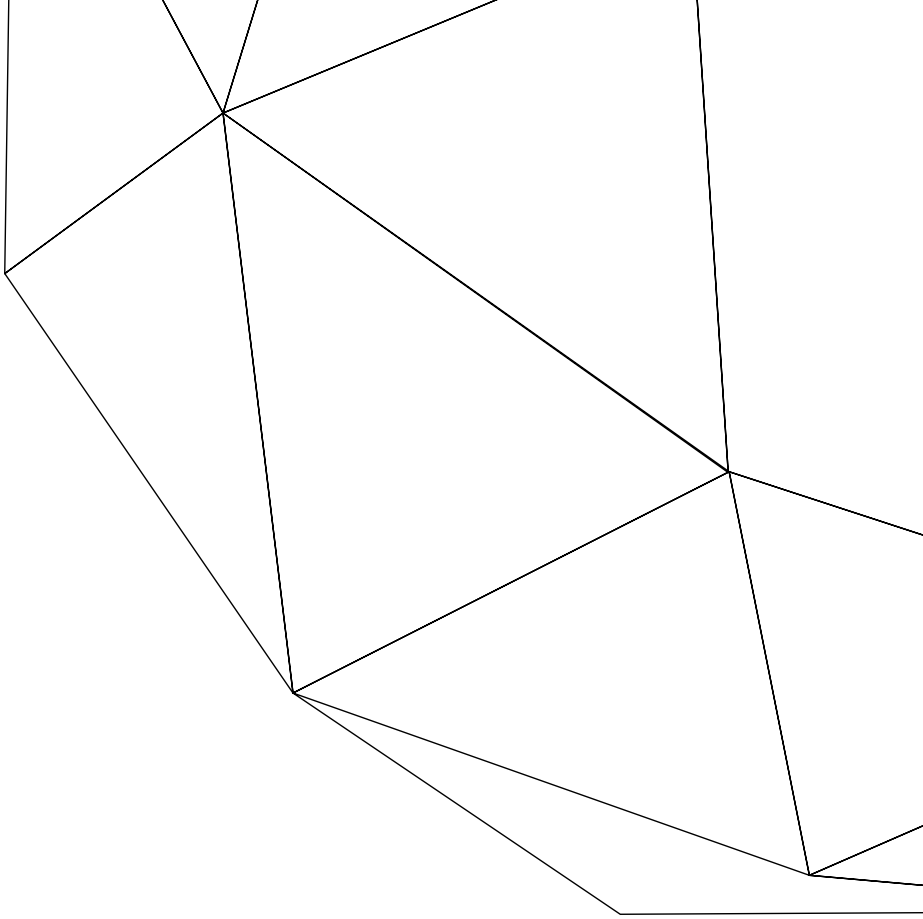

Green Climate Fund working paper No.5

Making blended finance work for nature-based solutions

GREEN CLIMATE FUND | WORKING PAPERS

March 2023

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Green Climate Fund Working Paper No.5

Making blended finance work for nature-based solutions

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GREEN CLIMATE FUND, March 2023

Contents

Executive Summary

In the wake of the adoption of the 2022 Kunming-Montreal Global Biodiversity Framework, the financing gap to address global biodiversity loss has never been more glaring. By 2050, the total investment needs for nature will amount to an annual USD 536 billion—more than four times the current global annual flows of USD 133 billion.[1] There is an urgent need to reorient and realign the way public finance is planned and disbursed and catalyze private finance at scale for nature.

Recent figures are compelling: with half of the world's gross domestic product (GDP) dependent on nature and 75 per cent of global crops relying on animal pollination,[2] the importance of filling the biodiversity finance gap cannot be overstated. There is global recognition that biodiversity loss is just as urgent as the climate crisis and that they are intimately linked. Ecosystem degradation is both a cause and a consequence of climate change and ecosystem protection and restoration is a powerful solution to advert catastrophic climate change.

Numerous innovations to de-risk and catalyze climate and nature investments have appeared in the past half century. As at March 2023, the OECD database on "Policy Instruments for the Environment" (PINE) contains information on over 3900 economic and market instruments implemented in more than 130 countries globally.[3] Notably, it lists a total of 234 biodiversity-relevant taxes spanning 62 countries.[4] Similarly, the IEA's Policies and Measures Database provides access to information on 7260 public climate policies and measures, including information instruments; regulations; taxation; and payment and transfer instruments.

Different classifications have been adopted to classify these instruments.[5] Consolidating the classifications of OECD, IEA and IPBES and in line with Hourcade et al (2021), [6] this publication discusses five categories of instruments to catalyze finance for nature-based solutions.

1. **Information instruments** are key in modifying behavioural changes, including in financial and corporate sectors. Biodiversity action plans send a long-term market signal. Nature-related risk disclosures enable firms to assess the impact of their production patterns and supply chains nature and their exposure to ecosystem degradation. They have also proven to be a powerful tool to inform consumers and enable them to send signals to the market by selecting products sourced sustainably, such as deforestation-free commodities. Information instruments increase transparency and traceability, allowing all stakeholders to recognize the role of nature, accelerate the transition and ultimately scale climate ambition.
2. **Control and regulatory instruments** aim to shape behaviour and activities through statutory means. The biodiversity community has a long history of such instruments, starting with protected areas— one of the oldest yet most effective regulatory instruments, as underscored by the inclusion of the 30x30 target in the Kunming-Montreal Global Biodiversity Framework (2022) and the High Seas Treaty (2023).[7] Permits and licenses such as fishing quotas and logging regulations also fall into this category, as do more recent regulations to decouple

[1] United Nations Environment Programme (2022). State of Finance for Nature. Time to act: Doubling investment by 2025 and eliminating nature-negative finance flows. Nairobi. https://wedocs.unep.org/20.500.11822/41333
[2] Vanston, S. & Philipp, A. (2022). What biodiversity loss and COP15 mean for investors. https://www.msci.com/www/blog-posts/what-biodiversity-loss-and/03659333489
[3] OECD PINE database can be accessed at https://www.oecd.org/environment/indicators-modelling-outlooks/policy-instruments-for-environment-database/
4 OECD September 2021: Tracking Economic Instruments and Finance for Biodiversity 2021
[5] For example, IPBES uses a broader categorization than OECD and IEA and clusters environmental policy instruments into four main categories: 1. Legal and Regulatory Instruments; 2. Rights-Based; 3. Instruments and Customary Norms; 4. Economic and Financial Instruments; and 4. Social and Cultural Instruments (see https://www.ipbes.net/policy-instruments).
[6] Hourcade JC, Glemarec Y, de Coninck H, Bayat-Renoux F, Ramakrishna K, Revi A: Scaling up climate finance in the context of COVID-19, Green Climate Fund, Republic of Korea; 2021.
[7] Both historic agreements include the ambitious target of protecting 30 per cent of the world's surface area and 30 per cent of international waters by 2030 respectively (https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222 and https://www.un.org/bbnj/?_gl=1*8zabic*_ga*MTgxMTQ4MDY3MS4xNjczNTAzNDE1*_ga_TK9BQL5X7Z*MTY3ODQwMzEwNy4zLjAuMTY3ODQwMzEwNy4wLjAuMA)

deforestation from commodities (e.g., the EU Deforestation Regulation, the UK Environment Act and the US Forest Act).

3. **Economic and market instruments** act as incentives or disincentives to shape firms and consumer preferences. They include biodiversity-positive carbon credits, biodiversity offsets, payments for ecosystems services and nature certificates. Once the domain of the climate change community, growing demand for carbon credits with "co-benefits" have demonstrated the potential for voluntary markets in particular to benefit both climate and biodiversity. Green procurement and certification schemes are also included in this category, acting in tandem with information instruments.
4. **Institutional instruments** are institutions, in the sense of organizations, which help realign financial flows with climate and/or biodiversity priorities, such as market regulating agencies, environmental agencies, green banks, investors' coalitions, green courts or tribunals, and associations of central bank regulators.
5. **Financial instruments** consist in direct public investments in specific financial mechanisms, often to demonstrate proof of concept and potential scalability and/or replicability. In the domain of biodiversity, grants in the form of fiscal transfers, official development assistance, private philanthropy or individual grants remain the most frequent financial instrument. However, because of the scarcity of public resources and their high level of concessionality, grants sometimes have limited potential for replication and scaling up, hence the recent diversification of financial instruments to include equity, guarantees, insurances and debt instruments which in turn have significant potential to crowd in private finance when designed appropriately. Many of them can be integrated and combined into broader financial mechanisms such as bonds and debt swaps.

While the climate change community has appropriated most of these instruments, some have yet to be fully leveraged by the biodiversity community as it has historically relied on information and regulatory instruments, fiscal transfers and grants. The recent convergence between biodiversity and climate, as highlighted by the UNFCCC Sharm El Sheikh Implementation Plan as well as the Kunming-Montreal Biodiversity Framework, constitutes a breakthrough: for the first time, there is both scientific and political consensus that climate change and biodiversity loss are two faces of the one and same crisis. This "polycrisis" provides fertile intellectual ground for crossbreeding of experiences and a window of opportunity to transfer these instruments across to the biodiversity community.

With 47 per cent of its current portfolio benefiting nature, the Green Climate Fund (GCF) has significant experience in designing innovative financial mechanisms for nature-based solutions, often with major potential to leverage both public and private finance. GCF's added value to support innovative financial mechanisms for nature-based solutions lies in the following elements:

- *High risk appetite.* GCF aims to de-risk investment to mobilize finance at scale, including some initiatives considered too risky by multilateral or national development banks. This includes designing innovative financial mechanisms, experimenting with a mix of economic and financial instruments, supporting emerging ventures and acting as anchor or first-loss investor.
- *Capital agnostic.* GCF catalyzes climate innovation by investing in new business models to establish a proof of concept, notably thanks to its capacity to deploy all types of financial instruments, ranging from grants and loans to equity and guarantees. It acts as a green market accelerator while continuing to enhance access to climate finance.
- *Partner agnostic*. GCF's accredited agencies and delivery partners number over 200 and span multilateral and national banks, international financial institutions, development finance institutions, UN agencies, conservation organizations, equity funds, government agencies, regional institutions and more. These diverse partnerships enable GCF to build on knowledge and experiences to drive systemic change that achieves climate ambitions.

Within GCF's portfolio of existing projects and pipeline of proposals for approval, the instruments mentioned above do not come as standalone items but as part of larger financial systems and reforms which are tailored to specific needs and to achieve maximum impact. Below are just three ways of how instruments can be combined for maximum impact:

- A blended finance approach can combine different instruments in complementary and synergistic ways based on mapping their respective strengths and weaknesses. Carbon credits, for instance, have the advantage of generating additional income and can increase the attractiveness of nature-positive investment. However, they often require upfront investments and are subject to both price volatility and the unforeseen destruction of underlying assets due to natural or human factors. In isolation, they do not always provide enough return to ensure the financial sustainability and thus integrity of carbon credit-generating activities. Depending on specific needs, they can be combined with other complementary sources of income (e.g., from the sale of commodities), upfront grants for technical assistance, or financial de-risking instruments such as concessional debt, equity, guarantee and insurance to access long-term affordable finance for upfront investment cost.
- Sequencing is another powerful means of combining instruments for optimal results. As sustainable businesses grow from startups to mature companies, their financing needs often evolve along a “maturity-concessionality” gradient, graduating from a reliance on highly concessional finance at first, such as grants, to concessional loans via equity. Many businesses require access to different types of financial instruments as they follow this gradient, with the ultimate objective of shifting away from a reliance on concessional finance to the ability to access capital markets. Financing mechanisms aligned with this objective, therefore, can combine multiple financing windows with technical assistance to help businesses with positive climate and biodiversity impacts to grow until they no longer depend on concessional finance.
- A third way of combining instruments consists in establishing partnerships between multiple financiers in a bid to secure instruments which can complement each other thematically, spatially or over time. This requires (i) qualifying and quantifying needs to identify financing gaps, (ii) mapping potential instruments which could plug these gaps, and (iii) building coalitions of partners, often at national or international levels, able to generate or realign the necessary financial flows. Given the large scale, such approaches can be particularly useful in financing climate and biodiversity impacts across entire landscapes or jurisdictions, or over long periods of time, such as several decades.

This paper describes the experiences of GCF and its partners in designing examples of these and other blended finance mechanisms and concludes with two messages. First, while these instruments can individually be perceived as standalone tools, they are most effective when combined and sequenced appropriately as part of a programmatic approach. Secondly, it is the needs of the beneficiaries capable of achieving an impact, whether in terms of climate or biodiversity—or preferably both—which should determine the structure and composition of financial mechanisms rather than the other way around.

Introduction

Three decades after the 1992 Rio Conference on Environment and Development, the twin crises of climate change and biodiversity loss have entered a new era. At the recent 15th Conference of Parties of the UN Convention on Biological Diversity (UNCBD COP15) in December 2022, Parties adopted the Kunming-Montreal Global Biodiversity Framework[8] that includes Target 8 on fostering positive impacts of climate action on biodiversity. It mirrors the Sharm El Sheikh Implementation Plan[9] adopted just weeks earlier at the 27th Conference of Paris of the UN Framework Convention on Climate Change (UNFCCC COP27) which underlines the need to address the interlinked global crises of climate change and biodiversity loss.

With both conventions now fully acknowledging that climate change and biodiversity loss are two sides of the same coin, policy and science are finally in sync. Ecosystem degradation is a cause and a consequence of climate change, and ecosystem protection and restoration are powerful solutions to avert catastrophic climate change. Both the Intergovernmental Panel on Climate Change (IPCC) and the IPBES also recognize that safeguarding and strengthening nature are essential to securing a livable future for humanity in the face of climate change.

This convergence between science and policy comes none too soon. The synthesis of the Six Assessment Report of the IPCC[10] indicates that the world is on track to reach a 1.5 degree increase within a mere decade and 3.2 degrees by the end of this century, with devastating consequences for people and planet. Yet this scenario can be averted with systemic changes across sectors, and previous studies show that nature alone can contribute up to a third of the efforts required.[11]

One of the greatest challenges faced by both the biodiversity and the climate change communities is the mobilization of sufficient financing to reach agreed climate and biodiversity-related goals. To increase the effectiveness of financing in nature-based solutions,[12] reliance on grants through official development assistance is not sufficient. The current document provides an overview of the wide range of instruments available and how these can benefit both climate action and nature conservation, with a focus on the latest experiences of the Green Climate Fund and its partners in financial innovation to catalyze finance at scale, notably through blended finance mechanisms.

[8] UNCBD (2022). Kunming-Montreal Global Biodiversity Framework. https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222
[9] UNFCCC (2022). Sharm El Sheikh Implementation Plan. https://unfccc.int/documents/624444
[10] https://www.ipcc.ch/report/ar6/syr/
[11] https://unglobalcompact.org/take-action/events/climate-action-summit-2019/nature-based-solutions
[12] Nature-based solutions are defined by the United Nations Environmental Assembly as actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems and calls for more collaboration and resources. Source: UNEP (2022). Resolution adopted by the United Nations Environment Assembly on 2 March 2022: 5/5. Nature-based solutions for supporting sustainable development. https://wedocs.unep.org/bitstream/handle/20.500.11822/39864/NATURE-BASED%20SOLUTIONS%20FOR%20SUPPORTING%20SUSTAINABLE%20DEVELOPMENT.%20English.pdf?sequence=1&isAllowed=y

1. Financing Gaps for Climate and Nature and the Role of the Green Climate Fund

Financing gaps. Nature-based solutions have the ability to tackle the climate crisis, land degradation and biodiversity loss and play a major role in addressing a broad range of societal challenges, from managing water scarcity to reducing disaster risk to poverty alleviation.[13] Terrestrial and marine ecosystems are responsible for absorbing and storing about half of global carbon emissions.[14] The Intergovernmental Panel on Climate Change (IPCC) special report on impacts of global warming of 1.5°C found that three of the five most effective strategies for reducing emissions are nature-based solutions: ecosystem protection, ecosystem restoration and improved management of farmlands.[15]

However, nature-based solutions are also chronically underfunded. The State of Finance for Nature report[16] estimates that finance flows to nature-based solutions are currently worth USD 154 billion per year. However, these would need to more than double by 2025 to USD 384 billion and more than triple to USD 484 billion by 2030 (Figure 1) to keep climate change to below 1.5°C, halt biodiversity loss and achieve land degradation neutrality. The report observes that financing marine protection faces an even greater gap: SDG14 (Life below Water) is the SDG that has received least financing of all 17 SDGs with only nine per cent of total investment in nature-based solutions (USD 14 billion).

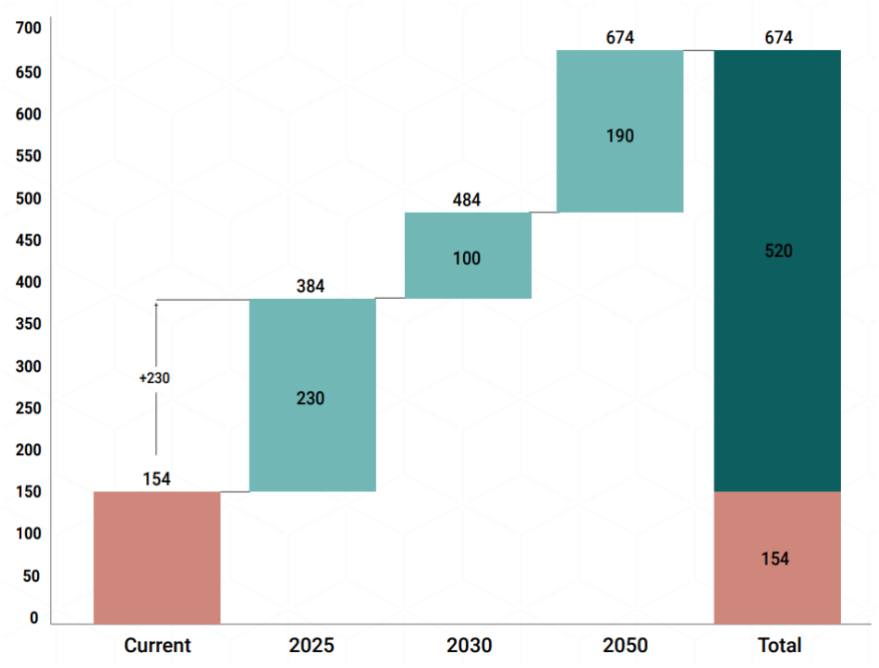


Figure 1. The trajectory of annual investment needs in nature-based solutions to limit climate change to below 1.5°C, halt biodiversity loss and achieve land degradation neutrality, USD billion (2022). Amounts in pink indicate existing financing.[17]

Public funds make up 83 per cent of the total, directing USD126 billion per year towards nature-based solutions through government domestic expenditure and USD2 billion per year through official

[13] Nature nature-based solutions are actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits. https://wedocs.unep.org/bitstream/handle/20.500.11822/39864/NATURE-BASED%20SOLUTIONS%20FOR%20SUPPORTING%20SUSTAINABLE%20DEVELOPMENT.%20English.pdf?sequence=1&isAllowed=y

[14] Griscom et al. 2017. https://forestclimateworkinggroup.org/wp-content/uploads/2018/09/Griscom-et-al-2017-PNAS-Natural-Climate-Solutions.pdf

[15] https://www.ipcc.ch/sr15/

[16] https://www.unep.org/resources/report/state-finance-nature-2022

[17] Ibid.

development assistance (ODA). The business and financial sector contributes approximately USD26 billion per year.[18] While philanthropic capital and carbon markets (for both green and blue carbon) have grown significantly in recent years,[19] impact investment and investment in sustainable supply chains have increased very little. The small share of private finance to nature-based solutions compared to public funding reflects the relative novelty of investing in natural capital and suggests that the investment case, *i.e.*, the return to the investor relative to the level of risk, needs strengthening.

In the meantime, nature-negative expenditures far outweigh investments in nature-based solutions. Government expenditure on environmentally harmful subsidies to fisheries, agriculture and fossil fuels is estimated at USD 500 billion to one trillion (or even USD 1.8 trillion per year,[20] three to seven times greater than public and private investments in nature-based solutions). Scaling up investments in nature-based solutions will not be sufficient unless nature-negative capital flows are also reduced and/or redirected.[21,22,23,24]

Compared to the sphere of climate change, financial innovation for nature remains incipient in several respects, especially considering that many solutions are still in emerging and nascent stages. The volume of climate finance is much larger than nature finance (USD 632 billion in 2020 alone).[25] Returns on investments in low-carbon transport, renewable energy and energy efficiency are increasingly attractive and becoming better understood not only among development finance institutions but also commercial banks, investment banks and institutional investors. In comparison, investments in nature-based solutions still have limited track records and high perceived risks, and often lack sufficient predictable, long-term revenue streams, thereby deterring investors.

The role of the Green Climate Fund. Since its operationalization in 2015, the Green Climate Fund (GCF) has built extensive experience with financial innovation. GCF's added value to support transformative climate solutions for a just energy, infrastructure, food systems and ecological transition towards net zero, climate resilient and nature-positive economies lies in the following elements;

- *High risk appetite.* GCF aims to de-risk investment to mobilize finance at scale, including some initiatives considered too risky by multilateral or national development banks. This includes designing innovative financial mechanisms, experimenting with a mix of economic and financial instruments, supporting emerging ventures and acting as anchor or first-loss investor.
- *Capital agnostic.* GCF catalyzes climate innovation by investing in new business models to establish a proof of concept, notably thanks to its capacity to deploy all types of financial instruments, ranging from grants and loans to equity and guarantees. It acts as a green market accelerator while continuing to enhance access to climate finance.
- *Partner agnostic*. GCF's accredited agencies and delivery partners number over 200 and span multilateral and national banks, international financial institutions, development finance institutions, UN agencies, conservation organizations, equity funds, government agencies,

[18] Ibid

[19] According to McKinsey's report (2022), when it comes to costs of blue carbon, around one third of the total abatement potential with blue carbon solutions (e.g., mangrove restoration, seagrass protection) would be viable below USD 18 per tCO_2. https://www.mckinsey.com/capabilities/sustainability/our-insights/blue-carbon-the-potential-of-coastal-and-oceanic-climate-action

[20] https://www.earthtrack.net/document/protecting-nature-reforming-environmentally-harmful-subsidies-role-business

[21] Mamun, A., Martin, W. & Tokgoz, S. (2019). Reforming agricultural support for improved environmental outcomes. IFPRI discussion paper 01891, 56 pp.

[22] FAO, UNDP and UNEP. 2021. A multi-billion-dollar opportunity—Repurposing agricultural support to transform food systems. Rome, FAO. https://doi.org/10.4060/cb6562en

[23] Koplow, D. & Steenblik, R. (2022). Protecting nature by reforming environmentally harmful subsidies: the role of business. Earthtrack, 61 pp.

[24] Ding, H. *et al.* (2022). Roots of prosperity: the economics and finance of restoring land. Washington, D.C.: World Resources Institute, 80 pp.

[25] Climate Policy Initiative. 2021. "Preview: Global Landscape of Climate Finance 2021". https://www.climatepolicyinitiative.org/wp-content/uploads/2021/10/Global-Landscape-of-Climate-Finance-2021.pdf

regional institutions and more. These diverse partnerships enable GCF to build on knowledge and experiences to drive systemic change that achieves climate ambitions.

According to internal analyses conducted in January 2023, 45 per cent of GCF's portfolio contributes to nature-based solutions, providing GCF with an important role to play in sharing experiences with the biodiversity community in investments for nature-based solutions.

As part of the financial mechanism of the UNFCCC, GCF's mandate remains squarely focused on climate adaptation and mitigation impact potential. However, this also makes it one of the largest global public financiers for nature. The significant financial investment of GCF in nature-related projects shows the enormous opportunities of combining climate and biodiversity innovative financing approaches. It also demonstrates how framing terrestrial and marine ecosystems, coastal areas and agricultural lands as being central to GCF's support for climate action in developing countries, provides opportunities for both climate adaptation, mitigation and biodiversity conservation.

A recent detailed analysis of GCF's portfolio and pipeline showed that out of 209 approved projects by the GCF Board as of January 2023, 114 focus at least partly on nature conservation, sustainable management and/or restoration (including agroecosystems and other anthropogenic ecosystems modified by land use). The GCF funding for these projects amounts to USD 5.2 billion (45 per cent of total) and the total funding (including co-financing) amounts to USD16.4 billion (38 per cent of total). In addition, another 30 funding proposals are in the pipeline with direct actions with the aim to protect, restore or manage nature, ecosystems and biodiversity. While three-quarters of these projects target forest and land use, ecosystems and ecosystem services, agriculture and food security and water security, all ten sectors that GCF invests in include financing for nature-based solutions.

GCF projects span a wide variety of interventions that benefit nature, including:

- Protecting or restoring natural ecosystems and their functions and services they provide;
- Actions aiming at managing specific or particular species (notably in the fisheries and forestry sectors) or that actively promote the use of ecosystems to reduce climate risks or climate impacts, and/or for climate change mitigation efforts (i.e., actions aimed at reducing coastal erosion or preventing and managing forest fires).
- Promoting sustainable productive uses for ecosystem permanence (e.g., agroforestry, sustainable agriculture and livestock practices, sustainable fisheries, ecotourism and promoting alternative livelihoods)
- Promoting the sustainable management of biodiversity and natural resources, mostly related to landscape planning (e.g., community-based natural resources zoning, integrated coastal zone management).
- Actions in support of all categories above, such as producing information for decision making (i.e., research, monitoring); and promotion of enabling mechanisms and conditions (e.g., capacity building, data and information management, knowledge products, strengthening policy and institutions and strengthening networks and cohesiveness between stakeholders; strategies for accessing markets, etc.).
- GCF projects cover different realms, with 90 projects covering terrestrial ecosystems and nine projects intervening exclusively in the marine realm. Several projects include a combination of terrestrial, marine and freshwater ecosystems. Among terrestrial ecosystems, 42 projects intervene in tropical and subtropical dry and humid forests, 21 in tropical and subtropical savannas and grasslands, 14 in wetlands and peatlands, and 14 in brackish tidal systems (Figure 2).
- A variety of climate risks are addressed by nature-based solutions supported with GCF projects. These climate risks relate to water supply constraints, therefore the need to intervene in water supply and storage; risks related to flood management and slope stabilization, soil erosion control. Nature-based solutions interventions under GCF projects also address risks related to drought management, wildfire management and prevention, extreme temperatures and pests and diseases. A reduced number of interventions address risks related to saline intrusion and sea level rise (Figure 3).

- In the current portfolio of approved projects, a total of 100 projects with influence in natural and productive ecosystems promote financial and economic mechanisms and instruments. The largest percentage of these projects develop loan and credit instruments, business models, investments/equity, and private sector involvement, followed by a suite of other instruments such as risk transfer, payments for ecosystem services schemes and public-private partnerships.

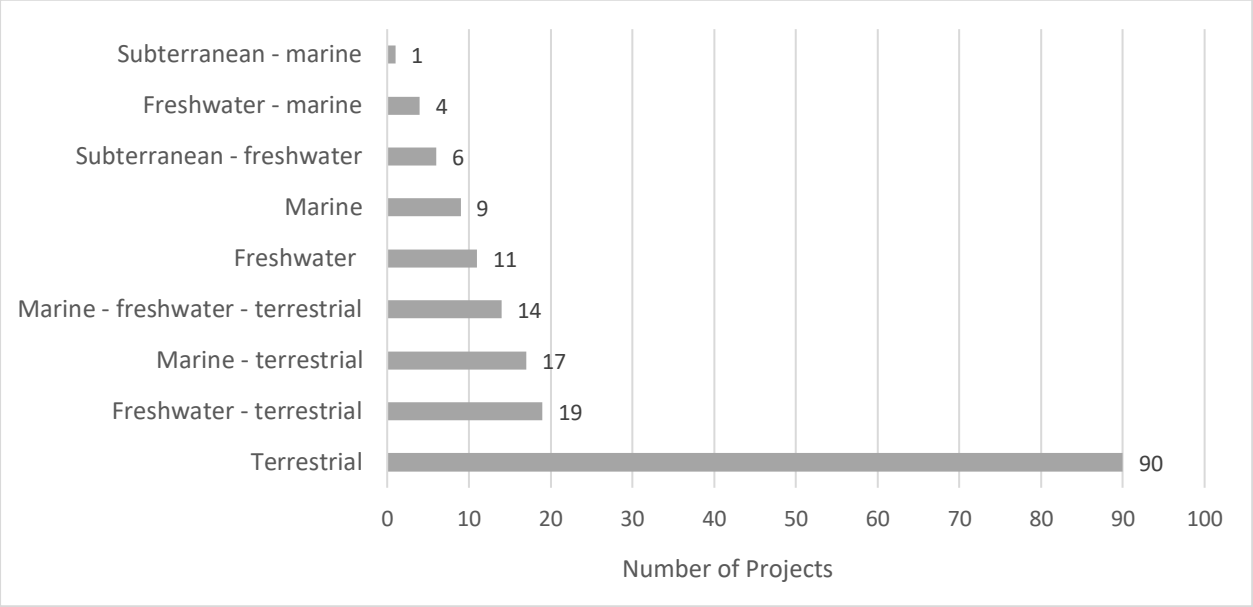


Figure 2. Frequency of GCF approved projects per realm, covering terrestrial, marine and freshwater ecosystems).

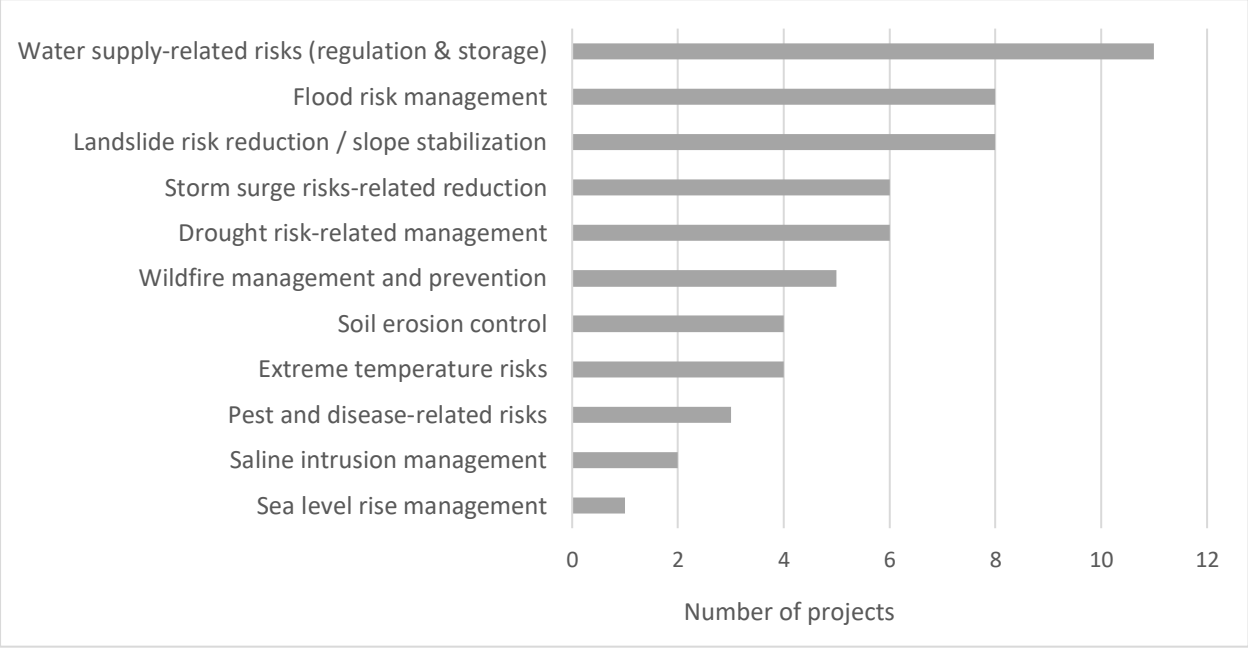


Figure 3. Exclusive climate risks addressed by GCF projects embedding nature-based solutions (projects addressing multiple climate risks are excluded).

Box I
Critical ecosystems in the spotlight

Sustainable Oceans. Recognizing the interdependence between ocean action and climate action, GCF is rapidly increasing its investment in coastal and marine ecosystem protection and will continue to do so during GCF-2. For oceans and the blue economy, GCF has adapted its blended finance approach using public resources to catalyze private sector investment into sustainable ocean initiatives. The Fund approved 22 projects that contribute to sustainable oceans, with a total GCF funding volume of USD 851 million covering 39 countries. As of February 2023, GCF's current pipeline of projects supported through project preparation facility (PPF) funds, include USD 9 million for approved PPF proposals related to sustainable oceans and the blue economy. Supported activities through PPF for marine and coastal ecosystems include the design of marine and coastal ecosystem protection, management and resilience programmes, analyses of resilient livelihoods of coastal communities, development of baselines for blue carbon potential estimations, the development of methodologies for the design of climate resilient coastal infrastructure, climate information and early warning systems for coastal communities and the development of climate-resilient and low-emission models for sustainable fisheries.

Wetlands. Wetlands under GCF project interventions include riparian forests, marshes, swamps, tropical flooded forests, peatlands, seasonal floodplains, mangroves, saltmarshes, coastal wetlands, coral reefs, seagrass meadows, estuaries, coastal lagoons, riparian ecosystems, permanent swamps, marshlands and urban wetlands. To date, GCF's 26 projects on wetlands span three continents and target at least 11 Ramsar sites. These climate investments are worth USD 1.2 billion in GCF resources.

Mountains. GCF invests in mountain conservation, restoration and sustainable management, while acknowledging multiple climate hazards and risks—both observed now predicted to occur in the future. So far, GCF has approved at least 29 projects in mountainous areas in 26 countries, with a total GCF investment of USD 1.7 billion.[26] Approved GCF projects in mountainous areas include the sustainable production of Argan forests in Morocco,[27] the sustainable management of conifer forests in Central America[28] and the conservation of tigers and snow leopards in Bhutan.[29] Most of GCF-approved projects in mountain ecosystems are designed to restore and rehabilitate natural resources and ecosystems that are key for productive systems, in particular agricultural systems for food and water security and improved market access. Many GCF projects in mountainous areas foster enabling conditions for the sustainable management of agroecosystems. Mountains not only constitute an extremely important setting for adapting to climate change; but also for understanding how climate change is impacting biodiversity. GCF-2 brings opportunities to continue supporting regional and global programmes that improve the positive interface of climate and biodiversity measures in mountains.

[26] The approved single country projects can also include other ecosystems and landscapes.
[27] https://www.greenclimate.fund/project/fp022
[28] https://www.greenclimate.fund/project/fp111
[29] https://www.greenclimate.fund/project/fp050

2. Instruments to de-risk and catalyze climate and nature investments

In the past half century, numerous innovations in public policy and financial instruments have appeared to help fill the finance gaps for climate and nature. As a March 2023, the OECD database on "Policy Instruments for the Environment" (PINE) contains information on over 3900 economic and market instruments implemented in more than 130 countries globally[30]. Notably, it lists a total of 234 biodiversity-relevant taxes spanning 62 countries[31]. Similarly, the IEA's Policies and Measures Database provides access to information on 7260 public climate policies and measures, including information instruments (plans, targets, etc.); regulations; taxation; and payment and transfer instruments.

Different attempts have been made at classifying these instruments, such as that of the Biodiversity Finance Initiative (BIOFIN) presented in Figure 4 which shows how an enabling environment is catalyzed for different financial and policy instruments that generate financial results contributing to positive impacts for people and biodiversity. For its part IPBES clusters environmental policy instruments into four main categories: 1. Legal and Regulatory Instruments; 2. Rights-Based Instruments and Customary Norms; 3. Economic and Financial Instruments; and 4. Social and Cultural Instruments. OECD PINE focuses on Economic and Financial Instruments and IEA.

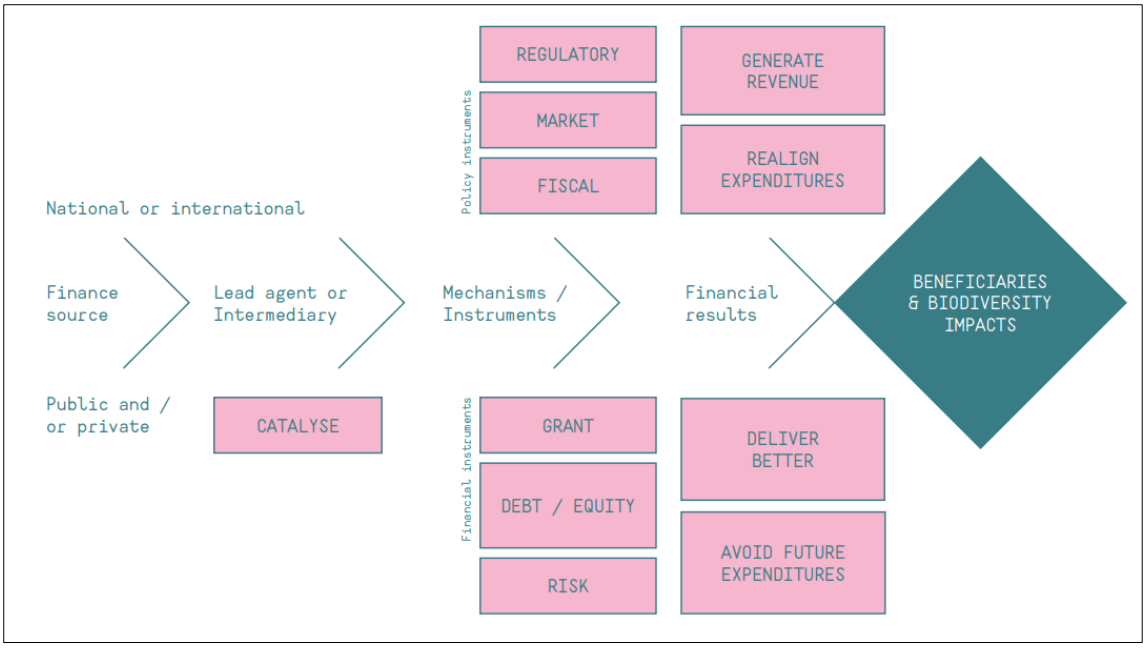


Figure 4. Schematic framework of biodiversity finance solutions (UNDP BIOFIN)[32]

As a way of consolidating the classifications of OECD, IEA and IPBES and consistent with Hourcade *et al*. (2021),[33] Figure 5 provides examples of environmental policy instruments according to five categories.

[30] OECD PINE database can be accessed at https://www.oecd.org/environment/indicators-modelling-outlooks/policy-instruments-for-environment-database/

31 OECD September 2021: Tracking Economic Instruments and Finance for Biodiversity 2021

[32] Ibid.

[33] Hourcade JC, Glemarec Y, de Coninck H, Bayat-Renoux F, Ramakrishna K, Revi A: Scaling up climate finance in the context of COVID-19, Green Climate Fund, Republic of Korea; 2021.

	Systemic				Targeted
	Information and empowerment instruments	**Control and regulatory instruments**	**Economic and market instruments**	**Institutional instruments**	**Financial instruments**
Market creation Instruments	Rely on knowledge, communication, and persuasion to influence behaviour and supply skilled labour.	Rely on the establishment of obligations, encouraging or prohibiting or restricting certain types of behaviour	Financial incentives and disincentives to influence private sector behaviour and investment decision-making	Create an institutional and organizational environment to facilitate policy development and innovation	Direct public sector (co) investment to establish a proof of concept or commercial track record of new solutions
Demand-side instruments	• Biodiversity action plans and financial plans • Climate and nature-related risk information disclosure and green taxonomies • Long-term policy commitment and targets • Valuation methodologies • Public awareness and persuasion	• Deforestation free regulations • Protected areas and zoning • Macro-prudential regulations (climate and biodiversity stress tests for banks and insurers, etc.) • Mandates • Bans • Building codes • Norms and minimum performance standards • Standards and labels	• Green procurement • Advanced market commitment • R&D commissioning	• Green finance regulatory networks, asset managers coalition and central bank coordination mechanisms • Establishment / realigning of environmental institutions • Development of R&D&I networks and ecosystems	
Supply-side instruments	• Investment in education and research • Technical and vocational training and retooling	• Streamlining licensing processes	• Property rights agreements • Phase out of harmful agricultural subsidies. • Nature certificates • Biodiversity-positive carbon credits • Green premium • Tradable permits and quotas • Taxes/tax breaks • Charges and penalties (e.g., bed taxes, etc.) • Favourable tariffs	• Dedicated financial institutions (green banks, green guarantee companies, green bond platforms, etc.)	• Public sector-led R&D • Project concessional finance (grant and loans) • Incubation grants/venture capital • Guarantees • Equity investment

Figure 5. Taxonomy of re-pricing and de-risking instruments. Adapted from Glemarec (2011).[34]

[34] Glemarec Y: Catalyzing Climate Finance - A Guidebook on Policy and Financing Options to Support Green, Low-Emission and Climate-Resilient Development, United Nations Development Programme, New York, USA; 2011.

In Figure 5, the first four columns list environmental policy instruments that create a business context conducive to the demand for nature positive investments. They include information, regulatory, economic, and institutional measures that create a demand for green goods and services by reducing market uncertainty. They also encourage green[35] investments by reducing their transaction costs.

In contrast, financial de-risking instruments do not seek to change the overall business context but tackle project risk by transferring it partially to public actors. They blend public and private resources, often to encourage market-creating projects that will establish a proof of concept (innovation to market) or commercial track record (market deployment) for new climate solutions. A successful commercial track record enables financiers and investors to better assess risks and to reprice the cost of finance. Lower financing costs greatly advantage green projects that tend to trade lower operational costs for higher capital costs.[36] Whether the terms of this trade are favorable depends on the cost of financing. The total repayment of a 25-year loan carrying a 14 per cent interest rate with monthly repayments to meet the higher capital expenditure of a green project will be three times the amount due for a similar loan with a four per cent interest rate.

Any transformative change to catalyze finance requires measures targeting both the demand and supply side of a market. While some individual instruments can deliver some direct financial flows in isolation, most transformative changes to catalyze finance at scale will require to combine and sequence different types of instruments.

Information and empowerment instruments are fundamental to develop, promote, sustain and monitor any financial and economic innovation. Information increases transparency and traceability, allowing all stakeholders to recognize the role of nature, accelerate the transition and ultimately scale climate ambition. Information instruments stimulate modifying behavioural changes, including in financial and corporate sectors. They have also proven to be a powerful tool to inform consumers and enable them to send signals to the market by selecting products sourced sustainably, such as deforestation-free commodities. These instruments also intend to address the siloed manner in which financial risks related to climate change and biodiversity loss are currently being addressed, thus highlighting blind spots and misestimations of systemic financial risk.

Information instruments underpin many other instruments, such as regulatory or market instruments further described below. For instance, measurement, reporting and verification (MRV) systems measure the amount of greenhouse gas (GHG) emissions reduced by a specific mitigation strategy, such as reducing emissions from deforestation and forest degradation (REDD+), report these findings to an accredited third party which then verifies the report so that the results can be certified and carbon credits can be issued. Blockchain technology integrates services performed by nature into the market by creating high-integrity nature credits.[37] Also, regulatory mechanisms, for instance on international trade of nature and green products, depend on reliable traceability systems.

Improved information disclosure allows financial institutions and companies to incorporate climate and nature-related risks and opportunities into their strategic planning, risk management and asset allocation decisions. Information disclosure frameworks have been developed by two closely related taskforces, one for carbon-related and another for nature-related financial disclosures (Taskforce on Climate-related Financial Disclosures (TCFD) and TNFD).[38] These networks consist of financial institutions, corporates and market service providers representing both preparers and users of financial disclosures. Their goal is to disclose information to support investors, lenders, and insurance underwriters in appropriately assessing and pricing a specific set of risks related to climate change and nature. One example of this is the Bank of England's Climate Change Adaptation Report that sets out early thinking on climate change and the regulatory capital frameworks for banks and insurers.[39]

[35] Throughout this document, the term “green” refers to climate-resilient, low-emission and nature-positive.
[36] UNDP: Original DREI Report, 2013. http://www.undp.org/content/undp/en/home/librarypage/environmentenergy/low_emission_climateresilientdevelopment/derisking-renewable-energy-investment/deriskingrenewable-energy-investment.html Accessed April 3, 2021.
[37] https://earth.org/interviews/nature-credits/
[38] www.fsb-tcfd.org and www.tnfd.global
[39] https://www.bankofengland.co.uk/prudential-regulation/publication/2021/october/climate-change-adaptation-report-2021

A challenge facing the financial system is that the conceptual framework for measuring and understanding biodiversity-related financial risks (grounded in a market failure and the fact that environmental damages are not fully priced into existing markets) is less advanced compared with progress made in climate finance[40] (e.g., TCFD; EU Sustainable Taxonomy, the EU's Non-Financial Reporting Directive, Climate Value at Risk (VaR), Carbon Earning at Risk, Paris Agreement Capital Transition Assessment). This can be explained by the fact that biodiversity-related physical risks are arguably more complex to estimate and quantify in financial terms than climate risks, while some biodiversity-related impacts may become financially material within a much shorter timeframe than climate-related physical risks.[41]

GCF uses a range of information instruments. It can support countries to examine the policy and institutional context for biodiversity, conduct biodiversity financial needs assessment, develop biodiversity finance plans to prioritize solutions and to implement biodiversity finance plans and solutions that result in positive outcomes for climate and biodiversity. These are essential to strengthening country climate investment capacity. GCF can also support business and finance, understand and integrate climate and nature risk, consistent with GCF's Private Sector Strategy.[42] Several tools and methodologies exist to support these efforts: the climate-nature nexus is an investor's guide for using existing climate-related datasets to screen their portfolios for nature-related risks;[43] the approach developed by the Cambridge Institute for Sustainability Leadership (CISL) to integrating climate and nature explores the importance of an integrated approach to climate and nature risk assessments to ensure that a holistic view of risks and opportunities faced by financial institutions is achieved;[44] the UN Principles for Responsible Investment (PRI) release of the world's first integrated climate and nature scenario to 2050 for investors, which creates a realistic assessment to help investors respond to the climate and nature emergency, based on existing emergent policy;[45] Business Action on Climate and Nature presents case studies from corporates taking a joint approach to climate and nature risks;[46] and INSPIRE works with a wider community of central banks and financial supervisors to advance and enhance ambition in the sustainable financial policy agenda.[47]

Control and regulatory instruments aim to shape behaviour and activities through statutory means. The biodiversity community has a long history of such instruments, starting with protected areas—one of the oldest yet most effective regulatory instruments, as underscored by the inclusion of the 30x30 target in the Kunming-Montreal Global Biodiversity Framework (2022) and the High Seas Treaty (2023).[48] Permits and licenses such as fishing quotas and logging regulations also fall into this category. Trade is also subject to control and regulation, including at international level. Regulation instruments have therefore been generated for specific commodities such as timber (notably the European Union Timber Regulation and resulting voluntary partnership agreements with individual producing countries)[49] and soy (such as the credits of the Round Table on Responsible Soy Association).[50] These include specific support to community enterprises as well as micro, small, medium and larger enterprises.

More recently still, consumer markets are breaking new ground in decoupling deforestation from imported commodities; since at least 90 per cent of tropical deforestation is linked to agricultural

[40] Kedward *et al.* (2021). Biodiversity loss and climate change interactions: financial stability implications for central banks and financial supervisors (tandfonline.com)
[41] Ibid.
[42] GCF/B.32/06: Review of the initial private sector facility modalities and the private sector strategy. https://www.greenclimate.fund/sites/default/files/document/private-sector-strategy.pdf
[43] The Climate-Nature Nexus – Nature Finance
[44] Integrating climate and nature: The rationale for financial institutions | Cambridge Institute for Sustainability Leadership
[45] Release of world's first integrated climate and nature scenario to 2050 for investors | News and press | PRI (unpri.org)
[46] Business Action on Climate and Nature — Business For Nature
[47] https://www.inspiregreenfinance.org/
[48] Both historic agreements include the ambitious target of protecting 30 per cent of the world's surface area and 30 per cent of international waters by 2030 respectively (https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222 and https://www.un.org/bbnj/?_gl=1*8zabic*_ga*MTgxMTQ4MDY3MS4xNjczNTAzNDE1*_ga_TK9BQL5X7Z*MTY3ODQwMzEwNy4zLjAuMTY3ODQwMzEwNy4wLjAuMA..)
[49] https://flegtvpafacility.org/
[50] https://responsiblesoy.org/marketplace?lang=en

production;[51] starting with the EU agreement on developing the EU Deforestation Regulation (EUDR).[52] It is also clear that regulators are moving from soft to hard law. EUDR aims to ensure that a set of key goods placed on the EU market—namely beef, soy, palm oil, wood, cocoa and coffee—will no longer contribute to deforestation or forest degradation. This regulation, however, has exposed a gap between expectations of consumer markets in the North and the capacity of many exporting countries in decoupling deforestation from internationally traded commodities.

GCF accredited entities such as the European Investment Bank (EIB) and International Finance Corporation (IFC) are leading the implementation of regulatory instruments and standards to finance nature-positive investments. These financial institutions are demonstrating that sustainable investment is possible while working with the corporate sector to meet their standards. EIB's approach integrates the primary production and the value chain, thus sharing the climate and nature-related risks and allowing for a holistic approach to monitoring these risks.[53] IFC is working with the Smithsonian Institute to develop a tool for the Paraguayan Chaco[54] with potential for replication by other local financial institutions intending to invest in regions with high deforestation risks. These tools also help to identify if the companies are complying or not with standards and regulations (e.g., IFC divests if companies are non-compliant). Concerning opportunities for complementarity and coherence with other environmental funds, GCF can continue to engage with the Global Environment Facility (GEF) to expand and sequence the GEF-funded Food Systems, Land Use and Restoration Impact Programme (FOLUR),[55] aimed at removing commodity-driven deforestation.

Further support to the implementation and enforcement of control and regulatory instruments include technical assistance to commodity exporting countries such as:

- Updating legislative, policy, social and MRV frameworks and traceability systems;
- Targeted finance to smallholders and small-scale producers to formalize their enterprises while engaging the value chains with minimum number of intermediaries and with an aspiration to reach new markets following more rigorous standards; and
- Low-level concessional finance to larger companies in commodity exporting countries to transition to deforestation-free commodity production and transformation. This includes costs related to additional due diligence needed to assess and quantify nature and climate-related risks, particularly in critical biomes and ecosystems.

The aim is to level the playing field, investing not only in the larger companies able to comply with more stringent regulations, but also ensuring that smaller-sized operators are able to comply, thus reinforcing deforestation-free value chains.

Economic and market instruments act as financial incentives or disincentives to shape preferences. Biodiversity-positive carbon credits, biodiversity and carbon offsets, payments for ecosystems services and nature certificates all fall under this category. Certification schemes are also included, acting in tandem with information and regulation instruments. Certification schemes for nature and climate-positive products have been developed for forest products, starting with the Forest Stewardship Council (FSC), and more recently for agricultural products, such as responsible palm oil[56] and deforestation-free cocoa.[57]

Once the domain of the climate change community, the growing demand for carbon credits with "co-benefits" has demonstrated the potential for voluntary markets in particular to benefit both climate and biodiversity. As companies and governments increasingly commit to net-zero targets, demand has grown for credits from conservation, restoration, and improved management of forests, wetlands, grasslands and agricultural lands which have the potential to deliver benefits extending well beyond carbon storage or sequestration. Credits have branched out into new subcategories such as

[51] Pendrill, F. *et al.* (2022). Disentangling the numbers behind agriculture-driven tropical deforestation. *Science* 377(6611). https://www.science.org/doi/10.1126/science.abm9267
[52] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7444
[53] Global Landscape Forum 2023. Video: Addressing commodity-driven deforestation in investment portfolios, how financial institutions can drive sustainability and value creation - Global Landscapes Forum
[54] https://goodgrowthpartnership.org/tool/paraguayan-chaco-map-for-sustainable-finance-to-come/
[55] https://www.thegef.org/newsroom/press-releases/new-gef-funded-project-protect-forests-boost-agriculture-and-support
[56] https://rspo.org/
[57] https://www.mirova.com/en/invest/natural-capital

restoration-based credits,[58] blue carbon credits,[59,60,61] reef credits[62] and others. The Nature Framework Development Group (NFDG) was established to develop a nature crediting framework, including an underlying methodology with an independent standard setter to drive investment to high-quality biodiversity conservation and restoration activities across ecosystems and geographies.[63]

Box II
Beyond Carbon Credits

The fast-growing voluntary carbon markets,[64] paired with the many co-benefits of such credits when sourced from nature-based solutions, have garnered significant attention[65,66] and prompted some partners to innovate and consider other thematic credits such as biodiversity or resilience credits.

The International Fund for Agricultural Development (IFAD) proposed an approach for monetizing resilience benefits,[67,68] which includes several knowledge and consultation activities to identify and prepare the benefits and interested parties, and financial instruments to initiate and guarantee transactions. The proposed solution is to first measure resilience, which is done through a set of recovery indicators. Then, resilience benefits are measured using existing methodology that standardizes resilience benefits irrespective of context; then translate these standardized benefits into units or "credits" that can be bought and sold on and off market. After this, the investors' community should be consulted to assess the appetite for investing in resilience benefits based on the objectively verifiable output/outcome indicators.[69]

Operating in a similar fashion, biodiversity credits could be generated by projects restoring, maintaining or enhancing biodiversity and sold to buyers on voluntary markets. However, the concept is faced with similar challenges to resilience credits, notably the difficulty in achieving consensus on how to measure biodiversity and uncertainty over demand, which for now remains entirely voluntary. In addition, the use of the term "credit" has been criticized on the basis that the sale of such units does not correspond to any agreed offset—hence the increasingly frequent use of the term "certificate".[70]

The Rimba Collective[71] led by Lestari Capital (with P&G, Nestlé, Unilever and Pepsico as founding partners) is an initiative led by buyers and processors of palm oil in South-East Asia to collectively support long-term conservation and restoration of forests. The costs of forest protection are linked to procurement volumes, integrating these costs into operations procurement decisions. The return of the investment is expected to be materialized in the form of certified ecosystem outcomes. The ambition is to support programmes over a long term of 30 years, needed to ensure the transformational change for sustainable, low-emission and resilient landscape management. Rubber,

[58] Palmer, M.A. and S. Filoso. 2009. Restoration of ecosystem services for environmental markets. Science 325: 575-576. DOI: 10.1126/science.1172976
[59] https://www.wired.com/story/blue-carbon-credits-could-help-restore-ecosystems/
[60] Earth Security (2022). Financing the earth's assets: the case for mangroves as a nature-based solution. https://www.earthsecurity.org/reports/financing-the-earths-assets-the-case-for-mangroves
[61] Herr, D. *et al.* (2018). Coastal blue carbon and Article 6: implications and opportunities. Climate Focus. https://climatefocus.com/publications/coastal-blue-carbon-and-article-6-implications-and-opportunities/
[62] https://eco-markets.org.au/reef-credits/
[63] http://verra.org/wp-content/uploads/Verra_NatureCredits_Overview_2022.pdf
[64] Ecosystem Marketplace's State of the Voluntary Carbon Markets Q3 2022. https://www.ecosystemmarketplace.com/publications/state-of-the-voluntary-carbon-markets-2022/
[65] Global Environment Facility (2023). Innovative Finance for Nature and People: Opportunities and Challenges for Biodiversity-Positive Carbon Credits and Nature Certificates. https://www.thegef.org/newsroom/publications/innovative-finance-nature-and-people
[66] World Economic Forum (2022). Forests for climate: scaling up forest conservation to reach net zero. White paper, 48 pp.
[67] Sharm El Sheikh guidebook for just financing, Chapter 4. https://guidebookforjustfinancing.com/wp-content/uploads/2022/11/Sharm-El-Sheikh-Guidebook-for-Just-Financing.pdf
[68] Puri, J. & Chowdhury, J. (2022). Monetizing resilience benefits as a new financial tool to unlock private sector financing. https://www.ifad.org/documents/38714170/46712954/monetizing-resilience-benefits.pdf/4c6f54c0-b6c8-6ef6-c78f-24ac94e93df5?t=1672995238624
[69] https://www.ifad.org/documents/38714170/46712954/monetizing-resilience-benefits.pdf/4c6f54c0-b6c8-6ef6-c78f-24ac94e93df5?t=1672995238624
[70] For further detail on biodiversity-positive carbon credits and nature certificates, see https://www.thegef.org/newsroom/publications/innovative-finance-nature-and-people
[71] https://lestaricapital.com/products/rimba-collective/

the garment industry, coffee and cocoa will follow palm oil. The challenge is to concretize investments that meet investors' requirements and to support companies in bridging the investment readiness gaps.

Fiscal instruments form an important element to stimulate markets and help reshape financial flows.[72] Central Africa, for instance, has an almost three decade-long history of designing fiscal systems aimed at making timber production more sustainable. In Cameroon, the 1994 Forest Law replaced the area fee with a stumpage fee, making taxation proportional to volumes extracted and therefore discouraging overexploitation. Likewise, a bidding system was introduced whereby timber concessions are now allocated to the companies offering the highest fees, thus causing a significant increase in government revenue from timber production.[73] Fiscal incentives in the form of tax rebates can also be designed to encourage deforestation-free commodities. To compensate the resulting drop in government revenue, a "bonus-malus" system has been proposed which would create an increase in taxes on business-as-usual commodities proportional to the rebates that deforestation-free commodities would enjoy.[74]

For natural capital to mature as a new asset class, the bankable models need to work for all stages of the asset cycle (conception, development, operations, aggregation).[75] Commonly, risk is reduced along the different stages of this asset cycle, and it is clear that in well-functioning markets such as in renewable energy, there is strong competition for investment. However, natural capital has proven to be more complex than renewable energy, hence the key importance of proof of concept. In addition, as described earlier, for nature to mature as an asset class, the regulatory environment needs to be conducive to investment to provide certainty for investors to articulate a clear long-term strategy for regulatory enforcement and reputation. Nevertheless, regulations take years to build and are costly. Regulation can also relate to subsidies to bring technology costs down the learning curve. GCF can support financing proof of concept to mature the concept and practice of nature as a new asset class.

Natural capital creates value, and carbon needs to be understood as only one type of value. To avoid neglecting the value of non-carbon benefits, diversification of risks is key. It is clear that financial investors intend to minimize risk through diversification and, therefore there is a tendency to move away from volatility, while diluting exposure to carbon which has proven to be a very volatile market. The generation and permanence of non-carbon benefits relate to more enduring management of landscape and reduction of longer-term risks.[76] GCF stands ready to help investors to reduce risks and therefore reduce the cost of capital in the long term.

To support diversification of non-carbon ecosystem services, GCF-approved projects related to nature-based solutions support 30 different categories of ecosystem services, including water regulation and supply, soil retention, conservation of biodiversity for landscape beauty for recreation, provision of fiber, food and timber, non-timber forest products, nutrient cycling, pollination services, conservation of genetic material for bioprospection and provision of shelter, among others. GCF projects also support countries in embedding methodologies for valuing ecosystem services into public sector planning and budgeting.

Institutional instruments consist in institutions or organizations that help align financial flows with climate and/or biodiversity priorities. This includes public financial or market regulating agencies, environmental agencies, green courts or tribunals, associations of central bank regulators, but also private sector institutions such as green banks, investors' coalitions, certifiers, insurance companies and non-government organizations. Such instruments can help consolidate international coalitions targeting scaling of climate and biodiversity-positive financing and actions such as the Coalition of Finance Ministers for Climate Action.

[72] World Bank (2021). Designing fiscal instruments for sustainable forests. Washington, D.C.: World Bank, 330 pp.
[73] https://revues.cirad.fr/index.php/BFT/article/view/20327
[74] Karsenty A. and S. Salau. 2023. Fiscal incentives for improved forest management and deforestation-free agricultural commodities in Central and West Africa. International Forestry Review 25 (1)
[75] Knowles, C. (2023). Market-based mechanisms: Sustainable conservation finance from incubation to operations. Global Landscapes Forum.
[76] ibid.

GCF's portfolio comprises several examples of institutional instruments, including the Green Bank in Mongolia. Alongside the Government of Mongolia and the Mongolia Sustainable Finance Association, GCF acted as a co-investor to establish the Mongolia Green Finance Corporation (MGFC). This dedicated green finance institution will have the in-house expertise to assess and support climate change projects developed by micro, small and medium enterprises and establish a successful track record for these new lending operations. After initial operations, MGFC will look to attract new capital to expand its activities. Grant-based technical assistance is provided to operationalize MGFC and build the capacity of the Government of Mongolia and the country's financial sector.

As a second example, GCF has supported the efforts of the Government of Jamaica to set up a Caribbean green bond listing on the Jamaica Stock Exchange, enabling it to list green and blue bonds through a dedicated facility. Green, Blue, Social, Sustainability and Sustainability-linked (GSSS) Bonds represent a new asset class that has gained traction over the past years across developed markets and that can help fill the SDG financing gap. Even though GSSS bonds grew by USD 600 billion in 2021, they still make up just a fraction of the bond market. Furthermore, green and blue bonds play a key role in the new generation of debt-for-climate and debt-for-nature swaps (see Box III).

As climate change effects are felt, investors are likely to become increasingly concerned of lending to vulnerable countries. A shift towards GSSS bond issuances aiming at funding the climate transition for sovereign issuers could also contribute to mitigate such risks by enabling governments to assert their political commitment to fight against climate change and biodiversity loss.

However, the size of this market remains limited in developing countries. The market for GSSS bonds is hampered by several barriers in developing countries, especially LDCs and SIDS. Adequate market infrastructure is needed to provide the foundation for capital market depth and liquidity. This includes exchanges and trading platforms, clearing houses, credit risk assessment, custodians, and fiduciaries, without which bond markets will be difficult to scale.

In addition, supporting local public development and commercial banks in the issuance of green bonds in the form of green bond trainings, screening of portfolios, advising on green bond frameworks, and providing clarity about the role of green bond verifiers is critical to accelerate the issuance of GSSS bonds. Although there are around 260 public development banks operating in developing countries, less than a quarter can access the international capital markets to capitalise their operations. Sustained investment in new institutions will be required for developing countries to access capital markets to finance a nature-positive transition.

Box III
Emerging debt instruments: thematic bonds and debt swaps

In the past 15 years, thematic bonds and debt swaps have grown in popularity[77,78] in the domains of climate[79,80] and nature,[81] garnering significant interest and increasing demand from developing countries themselves.

Thematic bonds. A bond is a fixed-income instrument that represents a loan made by an investor to a borrower, a unit of debt issued by private sector companies or governments and securitized as tradeable assets. A green bond is specifically earmarked to raise money for climate and environmental projects. Green bonds are issued by a variety of public and private players, such as governments, corporations, intergovernmental institutions, financial institutions and development agencies. Green bonds may come with tax incentives such as tax exemption and tax credits, making

[77] Cassimon, D., Prowse, M. & Essers, D. (2011). The pitfalls and potential of debt-for-nature swaps: a US-Indonesian case-study. *Global environmental change* 21:93-102.
[78] Cassimon, D., Prowse, M. & Essers, D. (2013). Financing the Clean Development Mechanism through Debt-for-Efficiency Swaps? Case Study Evidence from a Uruguayan Wind Farm Project. *European Journal of Development Research* 1–18
[79] Chamon, M., Klok, E., Thakoor, V. & Zettelmeyer, J. (2022). Debt-for-climate swaps: analysis, design and implementation. IMF working paper WP/22/162.
[80] Bolton, P., Buccheit, L., Gulati, M., Panizza, U., Weder di Mauro, B. & Zettelmeyer, J. (2021). Climate and Debt. CEPR Press: *Geneva Reports on the World Economy* 25.
[81] African Natural Resources Management and Investment Centre. 2022. Debt for Nature Swaps—Feasibility and Policy Significance in Africa's Natural Resources Sector. African Development Bank. Abidjan, Côte d'Ivoire.

them a more attractive investment vs. a comparable taxable bond. They are classified via nationally or internationally agreed upon standards and industry guidelines, particularly through the Climate Bonds Initiative, the Climate Bond Standard and the International Capital Market Association's Green Bond Principles.

Climate bonds specifically finance projects that reduce carbon emissions or alleviate the effects of climate change, while green bonds represent a broader category of instruments related to projects with a positive environmental impact.[82,83] Certified green bonds are issued for a variety of investments in different sectors, guided by scientific criteria: energy, water (including nature-based solutions), transport, buildings, ICT, waste management and land use and marine resources, including agriculture, forestry, ecosystem conservation and restoration. Green bond issuances doubled between 2007 and 2018, totalling USD 375 billion in 2021.[84]

An example of blended investment of bonds and loan is the partnership between the &Green Fund and Marfrig, one of the three biggest meat producers in Brazil, to enable and implement its transition to deforestation-free cattle production across various levels of the Brazilian beef sector.[85] To finance its transition to deforestation free cattle, Marfrig issued a USD 500 million Sustainable Transition Bond on capital markets. Through two environmental plans, Marfrig is contractually committing to achieving a full deforestation-free supply chain, including indirect suppliers. An unsecured USD 30 million loan by &Green enables full flexibility of the borrower's utilization of the bonds. &Green's loan has repayment acceleration terms if certain key impact targets are not met.

Despite strong growth in green bond issuances, particularly climate-related, their contribution to nature has been limited. It is estimated that in 2019, only 0.5 to 1 per cent of total capital raised via green bonds was directly or indirectly allocated towards biodiversity protection measures.[86] For instance, the World Bank, the issuer of first-ever green bond in 2008, issued 14.4 billion of green bonds between 2008 and 2020; of these, 60 per cent were in energy and transport, and only 15 per cent in agriculture and land use. Bond distribution is also badly skewed geographically, with Africa accounting for a mere 0.077 per cent of green bonds in 2021, illustrating the challenges in issuing bonds in countries with limited capacity to absorb debt.

Debt swaps. In the wake of the sovereign debt crisis generated by the onset of the COVID pandemic, debt swaps—a financial instrument that goes back to the 1980s—underwent a sudden revival in popularity as a means of addressing both debt and the climate crisis. Small island developing states have emerged at the forefront of innovation in this field as countries both highly exposed to climate change and highly burdened by debt. Debt-for-climate and debt-for-nature swaps, also known as debt conversions, seek to free up fiscal resources so that governments can finance climate and nature without triggering a fiscal crisis or sacrificing spending on other development priorities. Creditors provide debt relief in return for a government commitment to decarbonize the economy, invest in climate-resilient infrastructure, or protect biodiverse forests or reefs.[87]

The Nature Conservancy (TNC), in partnership with several financial institutions, developed debt swaps with different countries (Seychelles, Barbados, Belize) as part of a blue bonds strategy.[88] At the heart of these projects is a deal: a coastal or island nation commits to protecting part of its ocean territory. In support of that commitment, the governments can repurchase debt (often at a discount) and refinance it with more favorable interest rates and repayment terms. The resulting savings are then used to support new, planned and ongoing conservation work.

[82] Climate Bonds Initiative (2017), Sovereign Green Bonds Briefing.
[83] Climate Bonds Initiative (2019). 2019 Green Bonds Market Summary
[84] BloombergNEF (2022). Green Bond Boom Sees Issuances Double to $621 Billion. 8 March. https://about.bnef.com/blog/green-bond-boom-sees-issuances-double-to-621-billion/
[85] https://www.andgreen.fund/portfolio/marfrig-global-foods-s-a-marfrig/
[86] Deutz, A., G. M. Heal, R. Niu, E. Swanson, T. Townsend, L. Zhu, A. Delmar, A. Meghji, S. A. Sethi, and J. Tobin-de la Puente (2020), Financing Nature: Closing the Global Biodiversity Financing Gap.
[87] Georgieva et al. 2022. https://www.imf.org/en/Blogs/Articles/2022/12/14/swapping-debt-for-climate-or-nature-pledges-can-help-fund-resilience
[88] https://www.nature.org/en-us/what-we-do/our-insights/perspectives/an-audacious-plan-to-save-the-worlds-oceans/

In Belize, the blue bonds will enable the Government to reduce the country's external debt by ten per cent of GDP. At the same time, generate an estimated USD 180 million for marine conservation that allows to double the countries' marine protection parks—spanning coral reefs, mangroves, and sea grasses—from 16 per cent to 30 per cent of its oceans by 2026.[89,90] Under the agreement, a TNC subsidiary (BBIC) lent funds to Belize to buy back a USD 553 million "superbond"—the government's entire stock of external commercial debt, equivalent to 30 per cent of GDP—at a discounted price of 55 cents per dollar. It financed this by issuing USD 364 million in "blue bonds". The US Development Finance Corporation (DFC) provides parametric insurance through which the blue bonds received a strong investment-grade credit rating. This allowed the loan to have a low interest rate, a 10-year grace period during which no principal is paid, and a long maturity of 19 years. In return, Belize agreed to spend about USD 4 million a year on marine conservation until 2041. An endowment fund of USD 23.5 million will finance conservation after 2040, through a conservation fund overseen by the government of Belize (Figure 8).

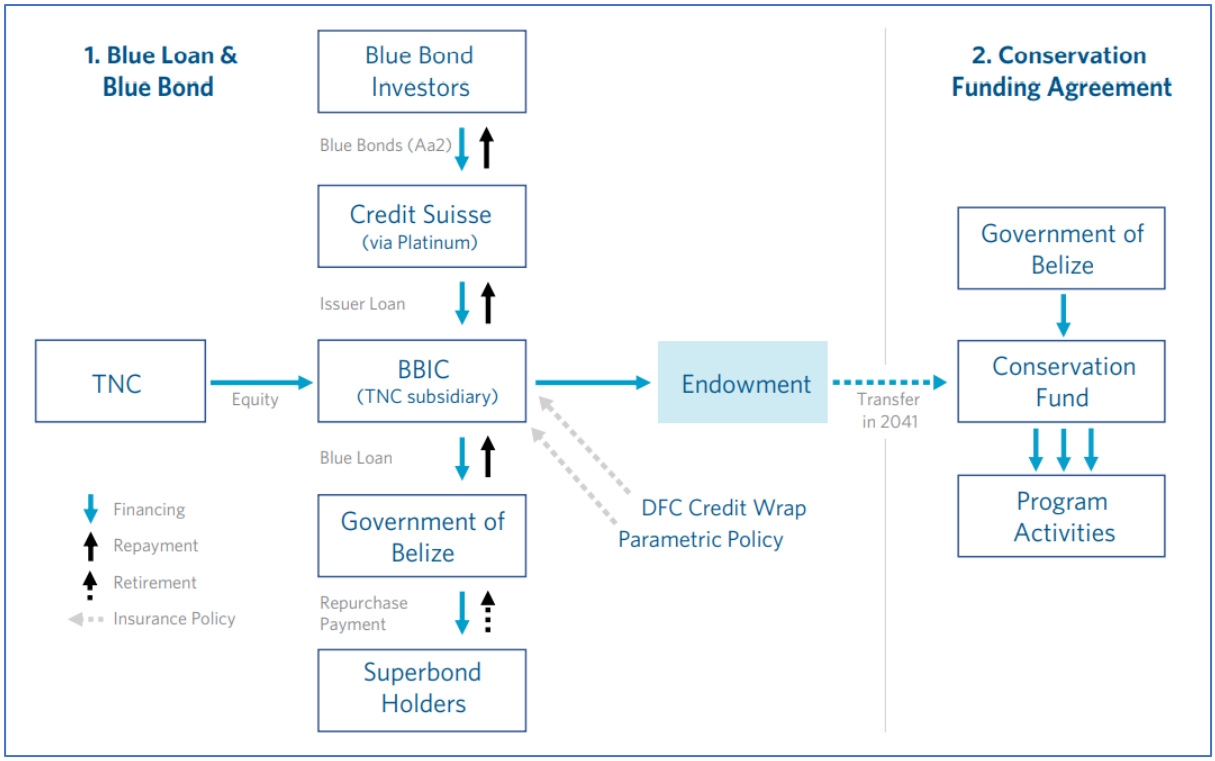


Figure 6: Structure of the Belize blue bond debt-for-nature agreement.[91]

While debt swaps create an opportunity to free large amounts of public funds to be spent on ecosystem conservation and climate action, with greater flexibility in spending than equity or concessional loans,[92] setting up a debt swap mechanism requires partners that jointly have to agree on financial commitments. In some cases, it is more efficient to address debt and climate or nature separately. For countries with unsustainable debt, a swap cannot restore solvency unless associated with debt relief or even cancellation. So far, no swap has come close to achieving this and swaps on their own should not be considered substitutes for debt restructuring.

[89] https://www.imf.org/en/Publications/fandd/issues/2022/03/Country-cases-meeting-the-future-Belize-Colombia-Ghana#Belize
[90] https://www.nature.org/en-us/newsroom/blue-bonds-belize-conserve-thirty-per cent-of-ocean-through-debt-conversion/
[91] The Nature Conservancy (2022). Case study: Belize debt conversion for nature conservation. https://www.nature.org/content/dam/tnc/nature/en/documents/TNC-Belize-Debt-Conversion-Case-Study.pdf
[92] Georgieva et al. 2022. https://www.imf.org/en/Blogs/Articles/2022/12/14/swapping-debt-for-climate-or-nature-pledges-can-help-fund-resilience

Financial instruments are direct public and private investments. Grants in the form of fiscal transfers, official development assistance, private philanthropy or individual grants remain the most frequent financial instruments for nature. However, the high level of concessionality of these instruments coupled with scarcity of public resources means that they have limited potential for scaling up or replication. Shaping public finance so it can leverage private sector capital can help meet the investment gap required in developing countries for nature-positive, low-carbon and resilient development. The risk-reward calculus of investments is arguably the most fundamental barrier to leveraging this private capital, and the public sector can complement support for low-carbon policies with direct finance that manages investment risks.[93]

An example in GCF's portfolio of de-risking private investment in nature-based solutions and ecosystem approaches is the Global Fund for Coral Reefs (GFCR) aimed at financing the conservation and sustainable use of one of the world's most threatened types of ecosystems. Targeting 17 countries in Africa, the Asia-Pacific, Latin America and the Caribbean this USD 500 million private equity fund aims to address critical financing and private investment barriers centred around the blue economy. GCF acts as anchor and first loss investor with its USD 125 million investment commitment, de-risking investment from senior equity investors and encouraging at the sub-project level further public and private sector investment in the following areas: sustainable ocean production, ecotourism, and sustainable infrastructure and waste management. A parallel grant window will also mobilize USD 125 million of concessional capital from philanthropic sources and governments with the aim of enabling policy, institutional and regulatory reforms and seed a pipeline of investment-ready projects for the grant window.[94]

An example of blending finance to de-risk track record-setting investment is the lending and guarantee facilities of the Central American Bank for Economic Integration (CABEI)'s Central American Dry Corridor programme.[95] This fund provides a blended financing mechanism for nature-based solution finance for which only limited offerings exist. The mechanism is composed of concessional finance from GCF in combination with market-rate senior debt as co-financing from CABEI. Intermediary Financial Institutions will receive GCF funding and CABEI's co-financing funding via senior loans to manage the EbA lending facility. These financial institutions lend to local partner financial institutions, such as cooperatives, local banks, NGOs and rural community banks, and these will then on-lend to end beneficiaries (e.g., rural MSMEs under EbA-related eligibility criteria[96]). The partner financial institutions will access the EbA lending facility at concessional below-market rates for direct on-lending to final customers for EbA investments. By mitigating credit risks associated with commercial EbA finance to end beneficiaries, the programme will create a guarantee facility for financial institutions on different levels that will secure financial institutions' on-lending and mobilize additional lending from their own resources and from additional public and private investors.

Given the variations in investment conditions across developing countries, each situation requires a different combination of financial instruments such as equity, guarantees, insurances and debt (loans) which in turn have significant potential to crowd in private finance when designed appropriately. Many of these instruments can be integrated and combined into broader financial mechanisms such as bonds and debt swaps.

The different financial instruments that are applied in nature-based solutions financing can be depicted along a gradient of concessionality and business maturity (Figure 6). This ranges from grants and seed capital, which are useful for early-stage businesses, notably for funding incubation or providing technical assistance. Grants have a maximum level of concessionality and can be useful in situations where returns on investment are not expected as a direct result of such investments. Next is a group of impact loans with a lower level of concessionality, where returns on investment include impact—in terms of mitigation and/or adaptation in the case of GCF. This includes equity and highly

[93] https://files.wri.org/d8/s3fs-public/pdf/moving_the_fulcrum.pdf
[94] https://www.greenclimate.fund/project/fp180
[95] FP174: https://www.greenclimate.fund/document/ecosystem-based-adaptation-increase-climate-resilience-central-american-dry-corridor-and-0
[96] Activities relate to i) implementation of integrated catchment management and restoration; ii) improvement of hydrological flow and infiltration of rainwater into groundwater reserves through forest and ecosystem restoration; and iii) reducing demand for scarce water resources by implementing water-efficient technologies at the farm- and household-level.

concessional loans, often needed for nature assets when perceived risks are high. In such cases, they might need to be accompanied by risk reduction mechanisms or guarantees. Finally, venture capital and commercial loans offer little to no concessionality and best fit late-stage businesses, thus representing an exit strategy for international financial institutions such as GCF.

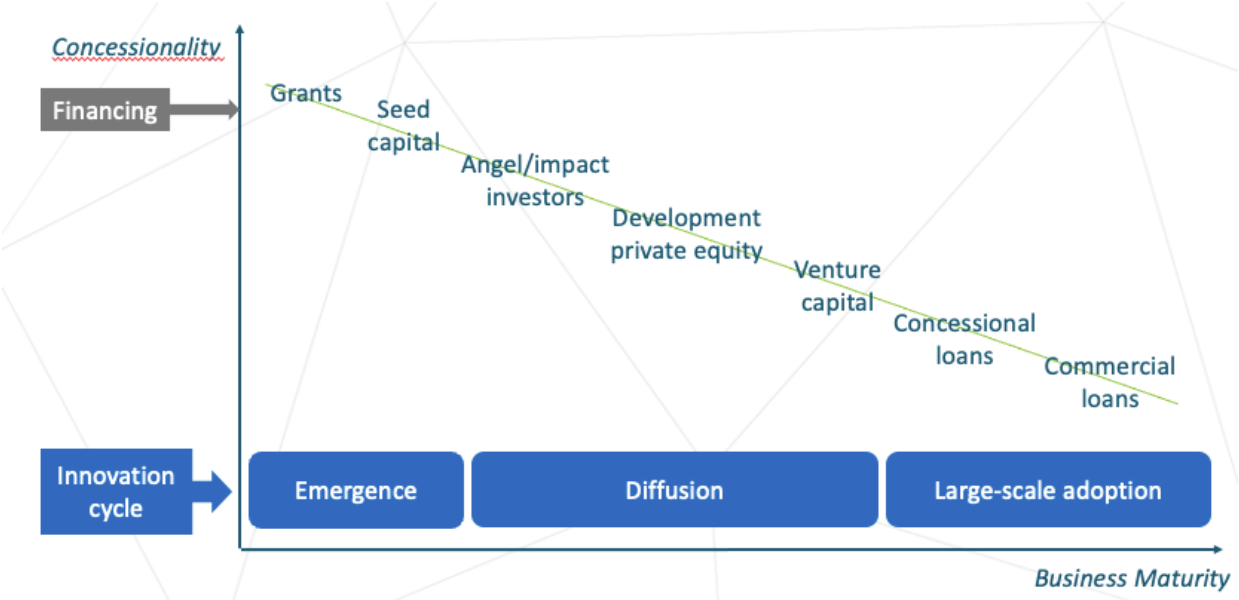


Figure 7: Different financial instruments, used in financing of nature-based solutions, along a concessionality-maturity gradient.

Being capital agnostic, GCF has the capacity to deploy an entire suite of financial instruments including equity, loans and guarantees. It is increasingly exploring new forms of blended finance to make it work better for nature-based solutions and ecosystems approaches. Figure 7 maps different mix of financial instruments adopted to respond with maximum efficiency and effectiveness to the desired conservation, restoration and sustainable management impact and outcomes.

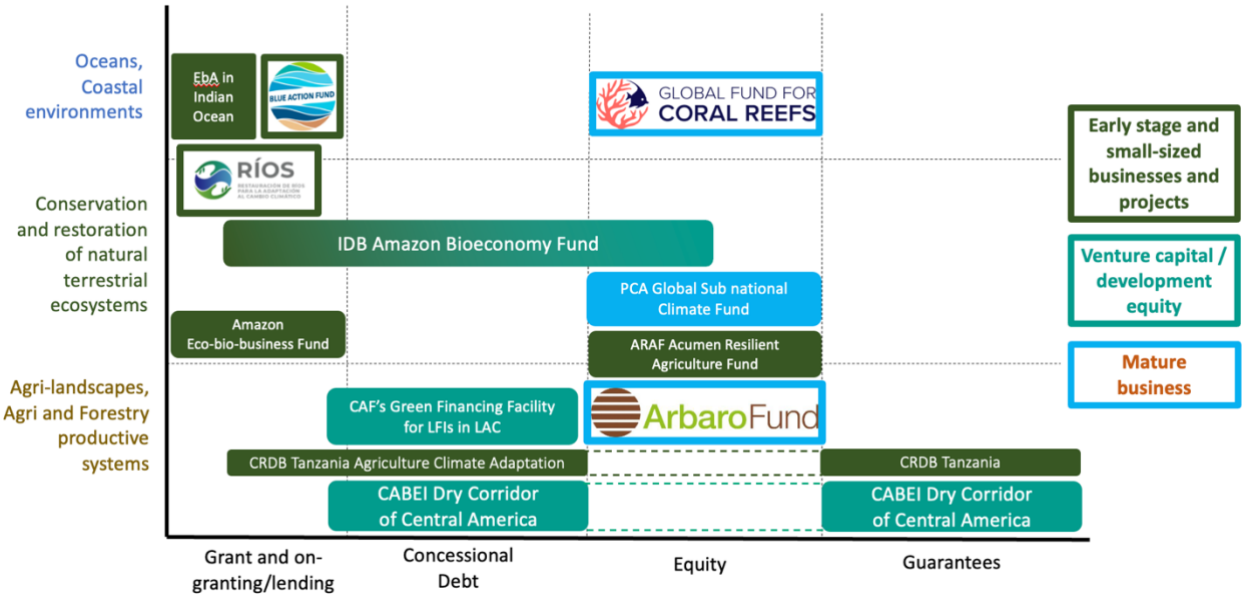


Figure 8. Examples of projects and programmes in the GCF portfolio that develop and apply different financial instruments, along the concessionality-maturity gradient, in different landscapes and seascapes.

It is crucial to remember that financial mechanisms can only achieve impact insofar as they are tailored to the needs of beneficiaries which can deliver on climate and nature, starting with the most vulnerable populations in developing countries. The effectiveness and efficiency of different policy instruments will depend on their alignment with the expectations of stakeholders. The GCF established an Indigenous Peoples Advisory Group, ensuring inclusion of indigenous peoples voices and advice in GCF's decision-making processes. This is part of a shift in GCF's portfolio, where the Fund's appetite for innovative finance actively benefits not only climate and nature, but also indigenous peoples and local communities.

3. The Potential of Blended Finance

The instruments described in section II have often been described and assessed on an individual basis and in isolation of each other. To this day, they continue to be commonly perceived as individual tools in a larger toolbox. This is especially the case of market, economic and financial instruments which are all too frequently perceived as being the key to unlocking private finance at scale. This perception is only partly true: while they hold the potential to crowding in finance from different sources, their impact often remains limited unless they are part of broader mechanisms that combine different types of instruments. Such mechanisms amount to more than the sum of their parts:[97] when designed appropriately and tailored to specific circumstances, they hold the power to plug the finance gaps for climate and nature.

Within GCF's portfolio of existing projects and pipeline of proposals for approval, the instruments mentioned in Chapter 3 do not come as standalone items but as part of larger financial mechanisms which are tailored to specific needs and to achieve maximum impact. Three of the main ways how instruments can be combined for maximum impact are presented below, based on examples from projects by GCF and its partners.

Complementarities

When taken in isolation, individual instruments present both advantages and shortcomings. One way to build on strengths and overcome weaknesses is to map and combine different instruments in a way that weaknesses of one instrument are compensated by the strengths of another.

Deforestation-free supply chains. As indicated above, the European Union Deforestation Regulation (EUDR) aims to decouple deforestation from six primary commodities imported into the European Union, with exporting companies given two years to comply to this new regulation. While justifiably ambitious, this short timeframe runs the risk of creating a mismatch between demand from one of the world's largest consumer markets and supply from companies in developing countries, some of which face the risk of being locked out of European markets. In order to avoid a possible disruption in supply chains with negative repercussions on the economies of developing countries, it is important to combine EUDR with a series of de-risking and re-pricing instruments such as one or more of the following:

- Information and empowerment instruments such as technical support and capacity building to commodity exporting countries in updating the legislative, policy, social and MRV frameworks at national or jurisdictional level to remove deforestation from commodities. This could include financing research on isotopes as the most promising means of ensuring traceability of non-meat agricultural products;
- Designing fiscal reforms to incentivize deforestation-free commodity production such as the "bonus-malus" mechanism[98] described in section III;
- Providing targeted, high-concessionality finance (e.g., grants) to smallholders and small-scale producers to formalize their enterprise (registration, administration, taxation) and enhance traceability and geolocalization capacities.
- Offering low-level concessional finance to larger or late-stage companies in commodity exporting countries to accelerate the transition to deforestation-free commodity production and transformation (e.g., &Green Fund).

As an example, the Responsible Commodities Facility already designed a mechanism managed by a dedicated company (Figure 9). This facility consists of an environmental committee for oversight, a debt fund for capitalization and a registry and exchange entity where buyers and producers market the (guaranteed deforestation free) commodity. The sources of financing for the debt fund are both commercial debt, concessional debt and grants, supported by green bonds and loans. The registry

[97] Davies, R., Hauke, E., Käppeli, J. & Wintner, T. (2016). Taking conservation finance to scale. *McKinsey Sustainability*. https://www.mckinsey.com/business-functions/sustainability/our-insights/taking-conservation-finance-to-scale
[98] Karsenty, A. (2022). Le projet européen de lutte contre la déforestation importée : les limites d'une approche indifférenciée. *Fondation pour la Nature et l'Homme*, 8 pp.

and oversight function is supported by a monitoring and traceability system, using innovative technology such as blockchain and bigdata, but also includes a public interface for transparency.

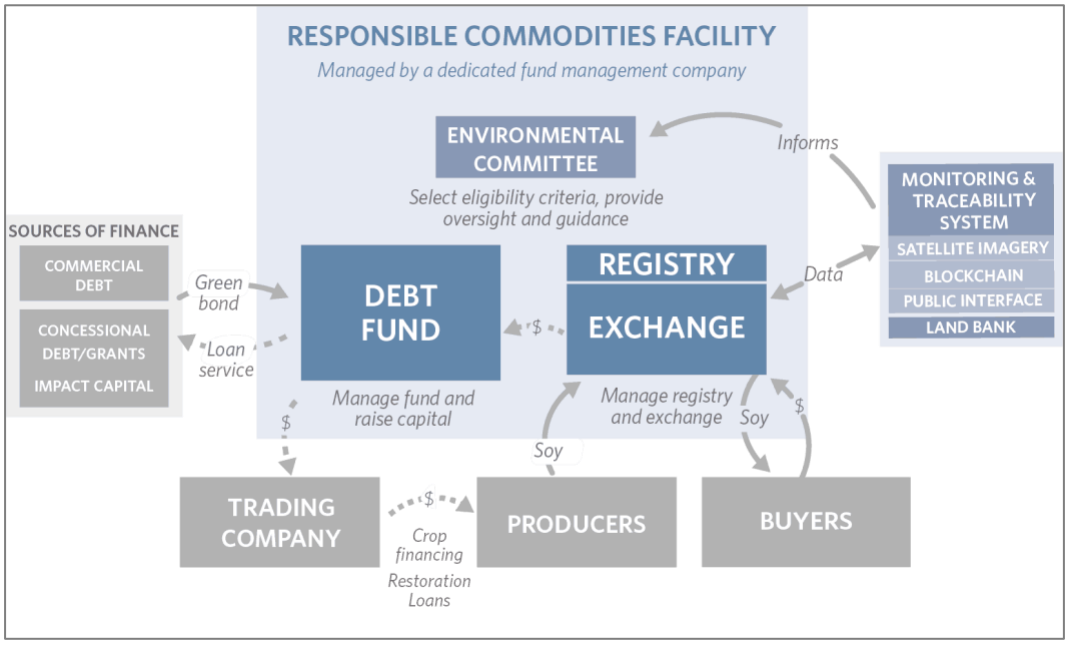


Figure 9. Possible structure for a facility for deforestation-free commodities for the global market.[99]

The global attention to EUDR undeniably provides a sense of urgency and willingness to contribute to its success, providing a window of opportunity to design and implement mechanisms aimed at complementing the upcoming regulation. The mixed success of the European Union Timber Regulation (EUTR) and the challenges in securing voluntary partnership agreements with timber-exporting countries also provides lessons,[100] notably in terms of the need to mitigate the risks of impacting negatively on livelihoods in developing countries.

Carbon credits. As a promising source of finance for nature, carbon credits have the advantage of generating additional income and can increase the attractiveness of nature-positive investments. However, they also present multiple challenges, including a reliance on upfront investments and exposure to uncertainty and risk, such as price volatility and destruction of underlying assets. This prevents them, for the time being, from providing sufficient returns to ensure the financial sustainability and therefore the integrity of carbon credit-generating activities. However, they can be combined with other complementary sources of income (e.g., from the sale of commodities), upfront grants for technical assistance, or financial de-risking instruments such as concessional debt, equity, guarantee and insurance to access long-term affordable finance for upfront investment cost.

For instance, GCF is currently supporting the development of a structure for blended finance in ecosystems off the coast of Quintana Roo, Yucatán and Campeche in Mexico. This project, known as Acción Yucatán, is currently receiving preparatory funds (PPF) from the GCF and aims to increase climate resilience of vulnerable populations, ecosystems, and productive systems through nature-based solutions and sustainable livelihoods associated to natural protected areas. The economy of the area is characterized by small-scale fisheries and tourism activities, managed by communities with a significant marginalization level and insufficient business skills of sustainable community-based enterprises and productive groups. An innovative structure was designed to mobilize private finance by delivering risk-adjusted returns. It combines a “credit for results” scheme through the generation of

[99] Taken from the Responsible Commodities Facility: https://www.climatefinancelab.org/project/responsible-commodities-facility/

[100] Luttrell, C.; Fripp, E. (2015). Lessons from voluntary partnership agreements for REDD+ benefit sharing. Bogor, Indonesia: Centre for International Forestry Research. https://www.cifor.org/knowledge/publication/5737/

blue carbon credits and the establishment of a community emergency fund to finance coral reef parametric insurance. The structure to increase and de-risk investments consist of a series of synergistic components:

- *Technical assistance:* GCF will provide technical assistance grants to local providers to increase business skills of community-based enterprises and productive groups, addressing themes such as internal organization and governance, business vision, accounting, creditworthiness, marketing, among others.
- *Credit for results:* A GCF grant will be provided to local financing institutions to provide loans at differentiated interest rates subordinated to the expected impact in resilience. The credits for results will be provided to community-based enterprises and productive groups working on/transitioning to sustainable ecosystem-based livelihoods, including, sustainable agriculture, small scale fisheries, aquaculture, organic apiculture and sustainable tourism.
- *Blue carbon credits.* The structure includes a financial mechanism for blue carbon projects for conservation, restoration and improved management of mangroves and seagrass based on the generation of carbon credits to be sold on voluntary markets. The financial mechanism will allow to increase financial resources to local communities for the conservation and restoration of their blue carbon ecosystems, generating climatic, environmental and social benefits, including the diversification of income.
- *Parametric insurance:* In parallel, a privately co-financed coral reef parametric insurance[101] will cover the costs of rapid response actions to identify and address damage to reefs after the impact of a hurricane. In the case of a hurricane, the insurance triggered will finance activities to restore coral reefs. For the potential investors and financial institutions, the Climatic Emergency Fund will be seen as a de-risking mechanism in case of climatic events, ensuring that the business will continue operating and be able to pay the credit in case of a climatic event.

The combination of economic and market instruments (carbon credits) with empowerment instruments (technical assistance) and financial instruments (loans, credits and insurance) is a powerful means of overcoming the classic shortcomings of carbon credits. In this case, parametric insurance will be sold along with carbon credits, thus reducing the risk for buyers that underlying assets could be destroyed. The combination of income from carbon credits with that of productive activities supported by credits for results will ensure that local livelihoods are not only enhanced but also made more sustainable.

Financing resilience. The value of tropical cloud forests goes largely unnoticed and unfunded, and losing them would hold back developing countries in their transition to climate resilience. Of the more than 1,000 hydropower dams planned across tropical emerging markets in the pursuit of better access to energy, more than 600 will depend on cloud forests for water. According to Earth Security,[102] the total value of hydroelectricity that currently depends on cloud-affected forests across these 25 countries is close to USD 118 billion over ten years. This increases to USD 246 billion when the hydropower plants currently being planned in these countries come online. Earth Security, with the support of UBS and HSBC, have identified a combination of innovative financing instrument options to fund the creation of new, long-term income streams from services provided by cloud forests, including a Sustainability-Linked Bond; cloud forests as part of a debt-for-nature swap; and cloud forests as a results-based finance instrument.[103]

Conservation International and the Climate Finance Lab[104] further developed the idea of the Cloud Forest Blue Energy Mechanism based on a combination of domestic investments (loans or equity) and payments for ecosystem services. The aim is to engage hydropower operators in Latin America to pay for upstream forest conservation and restoration through a new pay-for-success model, in which a hydropower plant pays for measurable ecosystem benefits provided by cloud forests within

[101] Parametric (or index based) solutions are a type of insurance that covers the probability of a predefined event happening instead of indemnifying actual loss incurred.
[102] Earth Security (2022). Cloud forest assets: financing a valuable nature-based solution. https://uploads-ssl.webflow.com/62b199427426cd16f424589f/638f013d1993bd8afb9c346c_ES_cloud%20forests%20report.pdf
[103] Ibid.
[104] Climate Finance Lab: Blue energy mechanism. https://www.climatefinancelab.org/ideas/blue-energy-mechanism/

the plant's catchment—principally reduced sedimentation, increased water flow and improved water regulation.

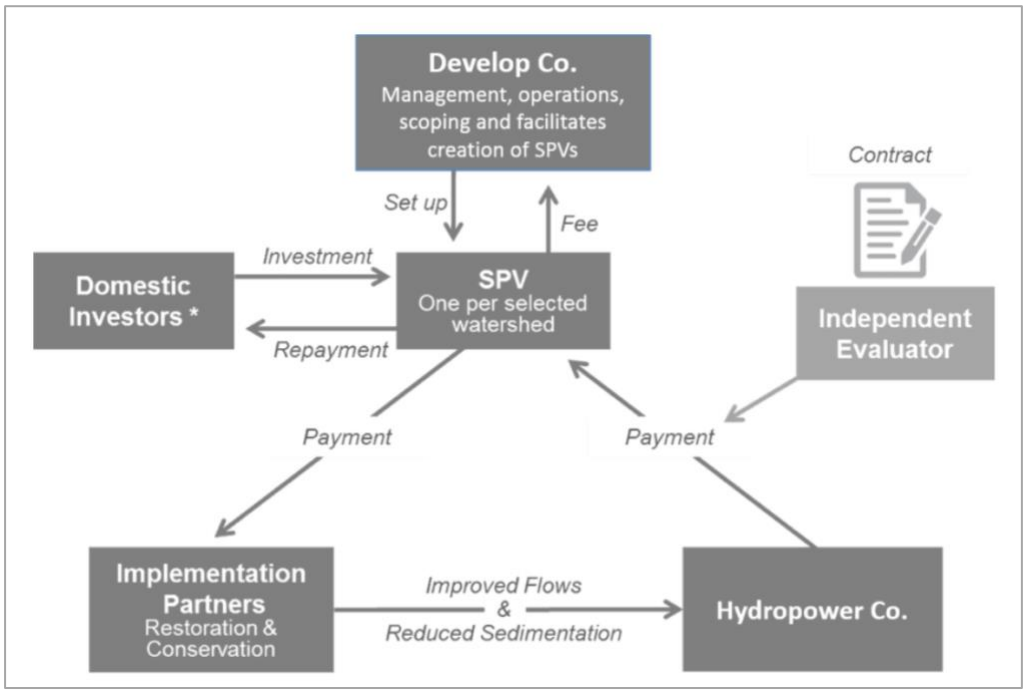


Figure 10: Financing for resilience—The case of creating tropical cloud forests assets.[105]

According to this model, an overarching organization acts as a global project development company. The company sets up and provides seed funding for a Special Purpose Vehicle (SPV) in each project site where a cloud forest watershed overlaps with a hydropower catchment area. The SPV runs the project and manages operations in each location. This enables much-needed flexibility in organizational structure and delivers transactional benefits expected to outweigh associated transactional costs. Debt and/or equity financing is raised from domestic investors who provide the SPV with the funding required. The SPV in turn organizes stakeholders within the watershed and uses raised capital to pay the implementation partners for the initial restoration and ongoing conservation of cloud forest within the plant's catchment area. Restoration and protection of tropical cloud forest provides measurable ecosystem services of reduced sedimentation, increased water flow and improved water regulation. Benefits received by the company are measured by an independent evaluator and trigger payments from the hydropower company to the SPV through performance metrics established in the pay for success contract. Finally, the SPV uses revenues to pay back investors. In this model, GCF has multiple entry points: it can provide a grant to cover the upfront costs of establishing the SPV; it can also provide first-loss equity or a junior loan to the SPV to help capitalize and de-risk it for subsequent investors.

Sequencing

Another means of combining instruments consists in providing a logical sequence of instruments, either in time or along the maturity-concessionality gradient described in section III. According to this approach, the level of concessionality of financial instruments is largely a function of the maturity of the beneficiary businesses. The more mature a company, the less reliant it will be on highly concessional financial instruments such as grants, and the more it will be able to access commercial loans and capital markets without support from public financial institutions. Mechanisms built on this principle usually combine a variety of windows offering finance at varying levels of concessionality and through different financial instruments, each tailored for specific types of businesses depending on their level of maturity.

[105] Ibid.

Such is the case of the Amazon Bioeconomy Fund, a USD 600 million facility that uses different grant funding for business incubation acceleration combined with financial instruments along the concessionality-maturity gradient.[106] This programme, supported by GCF to the tune of USD 279 million, aims to catalyze private sector investment through bio-businesses in prioritized value chains. This includes a diversity of companies including incipient value chains of agricultural produce, non-timber forest products, ecotourism and gastronomy, but also more innovative business such as fintech, remote sensing-tech and climate services. Eligible businesses range from early stage (small enough for grant-based micro-financing and incentives for start-up and technical assistance) to mature businesses (large enough to show returns and attract venture capital and equity) as well as the "missing middle" (businesses not large enough for private investors but too mature for early incentives).

The programme focuses on addressing some of the most critical barriers specifically faced by bio-businesses to attract investment, notably perceived risks by investors, immature capital and financial markets, weak institutional environment for bio-business development, lack of standardized frameworks to monitor biodiversity impacts, and knowledge and capacity gaps.

Beneficiaries in the participating countries (Brazil, Colombia, Ecuador, Guyana, Peru and Suriname) have different risk profiles and access to international capital markets. Local capital and financial markets vary significantly from one country to another. The programme applies a range of effective instruments for this programme (Figure 11). A grant window aims to benefit small and indigenous business through direct investments and technical assistance. Equity investment is made available through the Interamerican Development Bank (IDB) for early-stage innovative companies. Debt in the form of sovereign loans to later-stage businesses, while corporate loans and bonds for large bioeconomy businesses will be channelled through national development banks. Early-stage equity financing will be delivered through a venture capital fund structure that will deploy equity investment in the small-scale companies. The concessional loans to small and medium size companies will be delivered through credit lines from financial institutions and national development banks. Finally, bond issuances will be supported through a guarantee credit enhancement: IDB will provide guarantees in lieu of GCF which will support the cost of the guarantee through grants.

Using the combination of different mechanisms and funding lines to develop capacity and incubation of early ventures, GCF has the opportunity to promote climate impact along with a range of other social and environmental outcomes. IDB, which manages the fund, has developed a series of eligibility criteria such as the evidence of the adaptation, mitigation and biodiversity impacts of nature positive businesses including the development of indicators or metrics for adaption.[107] Supporting the early development of businesses through technical assistance grants can also promote equality by supporting business of indigenous peoples, women or youth.

[106] FP173: https://www.greenclimate.fund/sites/default/files/document/funding-proposal-fp173.pdf
[107] https://unepccc.org/adaptation-metrics-current-landscape-and-evolving-practices/

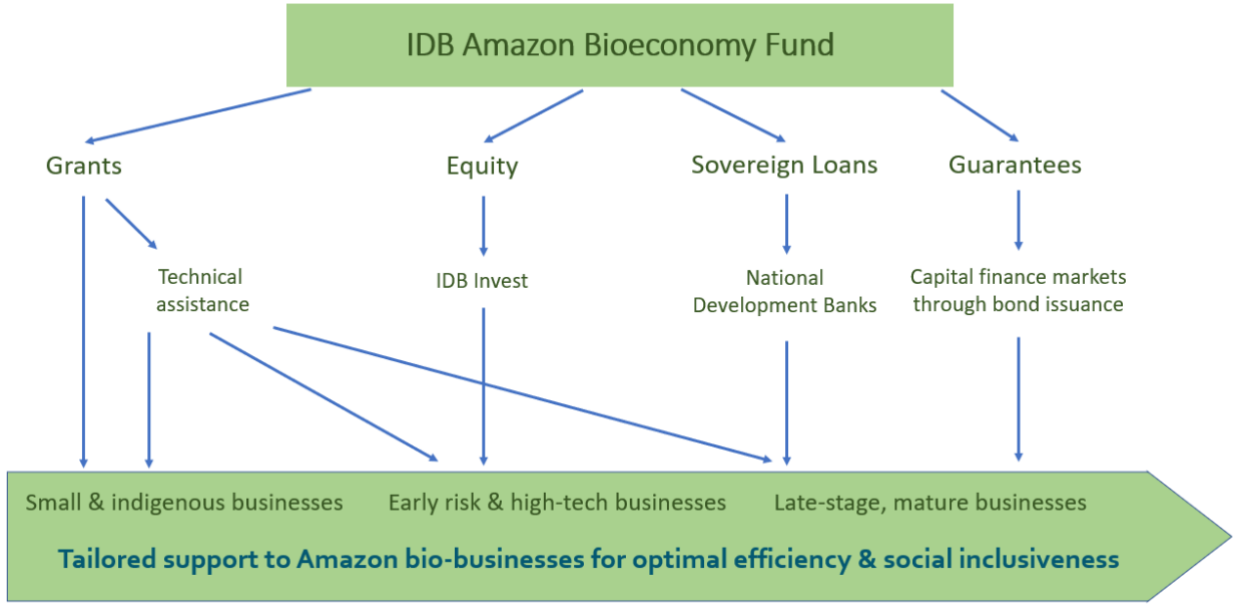


Figure 11. Structure of the Amazon Bioeconomy Fund

The Amazon Bioeconomy Fund structure is applicable to landscapes with a variety of businesses opportunities and a wide array of small and medium businesses with different levels of maturity and different financing needs. The fund is a flexible structure that is particularly well adapted to small scale, incipient markets and young businesses. At the same time, these elements are included in a broader mix of instruments in a more diverse business maturity landscape, where early ventures need to be brought up to speed in the market. However, while such a structure opens the possibility of businesses graduating from one window or instrument to the next, expectations should be managed as to the proportion of businesses able to mature through all the windows and out of the system to finally access capital markets.

Another example of sequencing instruments is the Blue S. Halo initiative, a new model for ocean conservation and sustainable fisheries management in Indonesia. The model is the first ever integrated marine protection and sustainable fishery management approach designed to fund itself over time, aiming to mobilize USD 30 billion in catalytic and commercial capital to support SDG-linked projects (grant funding, non-tax revenues and debt capital markets). Under the Blue Halo S initiative, economic benefits of sustainable marine resources development are expected to be reinvested in environmental protection, which in turn bolsters the natural resources supporting commercial production. GCF is providing Project Preparation Facility (PPF) funds to the amount of almost USD 1.5 million[108] to prepare the groundwork for the preparation of the Blue Halo S work in Indonesia. The blended financing scheme consists of a grant facility for Blue Ecosystem Adaptation Mechanism (BEAM) and a Blue Bond, to be developed together with the Government of Indonesia.

Partnerships

The establishment of partnerships between multiple financiers can help secure instruments that complement each other thematically, spatially or over time. This requires (i) quantifying needs to identify financing gaps, (ii) mapping potential instruments which could plug these gaps, and (iii) building coalitions of partners, often at national or international levels, able to generate or realign the necessary financial flows. While partnerships require the challenging first step of building large coalitions, the resulting coalesced political will can impact entire landscapes or jurisdictions and cover long periods of time, such as several decades.

[108] https://www.greenclimate.fund/document/blue-halo-s-blue-ecosystem-adaptation-mechanism-beam-0

Project finance for permanence (PFP) provides one such approach. Recognizing the financing gap to ensure the protection of high value conservation areas, the World Wide Fund for Nature (WWF) designed PFP as an approach to secure the policies, capacity, institutional arrangements and full funding for effective and long-lasting conservation goals. Originally applied in Brazil through the Amazon Region Protected Areas (ARPA) Programme, it has since been extended to Bhutan, Brazil, Canada, Costa Rica and Colombia. PFP formalizes commitments from different partners (governments, conservation trust funds, NGO, donors) to secure funds and manage ecosystems in perpetuity. PFPs often employ transition funds to temporarily help developing countries cover costs of conservation area systems until those countries can fully cover those costs using domestic resources.

The PFP approach incorporates the following components:[109]

- A large-scale, specific, and charismatic conservation goal;
- A conservation plan that details all activities to achieve and maintain the conservation goal;
- A robust financial model that estimates costs to achieve and maintain the goal in perpetuity;
- A set of clear, one-time prerequisites called closing conditions that PFP partners agree to meet before implementation can begin;
- Formal, upfront commitments for necessary funding to achieve the conservation goals. Funding may be in the form of donations, public budget increases, and/or revenue derived from sustainable financing mechanisms from public or private sources;
- An independent fund administrator with a multi-stakeholder board to provide oversight and transparency during implementation; and
- A clear set of rigorous, usually annual, disbursement conditions that must be met by partners for funds to continue to be released.

The Heritage Colombia programme (HECO) is one of the most recent PFP experiences. It was set up in 2015 by relevant public agencies, the environmental trust fund, donors and WWF. HECO aims at the long-term financing of 20 million hectares, or ten per cent of the country's territory, of sustainable landscapes that include protected areas. Activities include effective management and governance of the protected areas system as well as the generation of opportunities for sustainable and climate-smart rural livelihoods and value chains. GCF is contributing USD 43 million in grants,[110] complemented by USD 69 million from the Colombian Government through the development of new long-term sustainable financing mechanisms such as a fixed proportion of the national carbon tax.[111] Resources from the transition fund will create the conditions to secure a long-term flow of ecosystem and climate services in perpetuity with a clear exit strategy. By the end of the project life, ongoing recurring costs are estimated at USD 7.2 million per year sourced primarily from royalties on extractive industries and the carbon tax.

PFP is under implementation in another four countries and in planning or exploration stages in a further 15. PFP requires a strong and long-lasting commitment from public agencies to apply environmental stewardship because it relies on good governance and the possibility of deploying large amounts of public funding. In all current cases, preexisting conservation programmes and a conservation trust fund were key ingredients for a successful transition fund. Although currently applied to the conservation of protected areas, the approach cannot be extended to other climate-related goals such as landscape restoration and agroecology.

More than a specific financial or economic instrument, it is a policy and partnership approach that formalizes commitments from different partners to secure funds in perpetuity. While many structures target private funding, this is particularly aiming at mobilizing and consolidating domestic resources. The financial contribution from different partners to the transition fund creates trust among public

[109] Cabrera, H. et al. (2021). Securing sustainable financing for conservation areas: a guide to project finance for permanence. Washington d.c. amazon sustainable landscapes program and WWF. https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/1z0aqa0cl9_PFP_ASL_WWF_REPORT_2021_March_22_final_.pdf

[110] https://www.greenclimate.fund/document/gcf-b35-02-add05

[111] Barbier et al. 2020. Adopt a carbon tax to protect tropical forests. Nature, 578: 213-216. https://www.nature.com/articles/d41586-020-00324-w

agencies to continue funding and comply with disbursement condition. Because it targets long-term consolidation of (in the existing examples) conservation goals, disbursement conditions can include staffing levels and labour conditions, inclusion of local communities in management, monitoring etc.

However, lessons from initial PFP examples show that generating commitments requires champions at the highest levels of government. Because of the long-term vision and implementation, the PFP structure is sensitive to changes in national government administration. The size and duration of the PFP mean that these partnerships also depend on lasting in-country technical and fund management capacity, including in public conservation agencies, to ensure regularity in disbursement conditions over time.

Despite these challenges, partnerships centered on financing climate and nature have blossomed beyond PFP. Launched at UNFCCC COP27 and championed at the 2023 One Forest Summit, Conservation-Positive Partnerships were highlighted as a "political and financial contract for countries willing to protect existing carbon and biodiversity stocks".[112] Buoyed by the political attention to the climate-biodiversity nexus in the wake of UNFCCC COP27 and UNCBD COP15, such partnerships are likely to continue developing as further stakeholders, public and private, increasingly commit to financing nature and climate.

[112] https://www.elysee.fr/admin/upload/default/0001/14/f86e6815dbc85a797b84538b3aaff61bc2864d37.pdf

4. The Way Forward

With political calls from both UNFCCC COP27 in Sharm-El-Sheikh and UNCBD COP15 in Montreal to bridge climate and biodiversity objectives, an unprecedented window of opportunity has opened for the cross-fertilization of ideas between the spheres of climate change and biodiversity.

However, the recent wave of political support for financial innovation also risks turning some instruments into perceived silver bullets. The experiences described in this paper highlight two key lessons: first, blended finance is more than the sum of its parts: by building on the strengths and overcoming the weaknesses of individual instruments, it holds the power to fill the financing gap that stands between us and a sustainable, low-emissions and resilient future.

Secondly, each type of beneficiary who holds the key to climate and/or biodiversity impact has different financing needs. Financial mechanisms must therefore be tailored to each context and blended to meet these specific needs. Because beneficiary needs must determine the nature of the financial mechanism rather than the other way around, the full inclusion of beneficiaries is crucial from the earliest stages of project design. Hence the importance of collaborating closely with beneficiaries, whether they be public development banks or public authorities, private companies or NGOs, women, men or indigenous peoples and local communities.

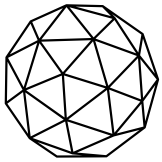
The establishment of partnerships between multiple financiers and thematic agencies can help secure instruments that complement each other thematically, spatially or over time and built on lessons learnt. As a hub of the climate finance architecture, GCF can support the creation by its key partners of such coalitions to accelerate a nature positive transition, including (i) accredited entities and delivery partners with expertise in nature and biodiversity, (ii) thought leaders and content partners such as think tanks and research institutes that spear innovation, and especially (iii) the Global Environment Facility and its upcoming Global Biodiversity Fund. This will feature prominently in the strategic programming of the second cycle of GCF starting 2024.

List of Abbreviations

AE	Accredited Entity
BBIC	TNC's subsidiary, Delaware limited liability company
CBD	Convention on Biological Diversity
EbA	Ecosystem-based adaptation
ER	emission reduction
EU	European Union
EUDR	European Union Deforestation Regulation
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse gas
GSSS	Green, Blue, Social, Sustainability and Sustainability-linked
IDB	Interamerican Development Bank
IEA	International Energy Agency
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
LAC	Latin America and the Caribbean
LDC	Least developed country
MRV	Measurement, reporting and verification
MSME	Micro, small, and medium enterprise
NbS	Nature-based Solutions
NDA	national designated authority
NDCs	Nationally determined contributions
NGO	Non-Government Organization
OECD	Organization for Economic Co-operation and Development
PFP	Project finance for performance
PPF	Project Preparation Facility
REDD+	Reducing emissions from deforestation and forest degradation; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks
RBP	Results-based payment
SAP	Simplified approval process

SDG	Sustainable Development Goal
SIDS	Small island developing states
SPV	Special Purpose Vehicle
TCFD	Task Force on Climate-related Financial Disclosures
TNFD	Task Force on Nature-related Financial Disclosures
UNCBD	United Nations Convention on Biological Diversity
UNFCCC	United Nations Framework Convention on Climate Change

NOTES



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