

Mobilising Public and Private Finance for Biodiversity

Good Practices in Unlocking Capital for Nature



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Mobilising Public and Private Finance for Biodiversity

GOOD PRACTICES IN UNLOCKING CAPITAL
FOR NATURE

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Foreword

This report has been developed under the OECD Environment Policy Committee and its Working Party on Biodiversity, Water and Ecosystems, as part of its 2025-26 Programme of Work. It complements and draws on discussions from an OECD International Workshop on Mobilising Public and Private Finance for Biodiversity, convened on 16 May 2025. The report and workshop contribute to a broader project funded by the European Union's Technical Support Instrument (TSI), which supports countries in the development and implementation of national biodiversity finance plans.

This report is intended primarily as a reference for policy makers and public finance institutions, while also being relevant to financial actors and conservation practitioners involved in the design and scaling of biodiversity finance approaches. It has two main objectives: 1) to map and assess biodiversity financing instruments and mechanisms, including their current use; 2) to provide actionable recommendations to help policy makers and public finance institutions strengthen the uptake, design and effectiveness of these instruments and mechanisms.

The report adopts a primarily instrument-focused approach, examining specific financing tools and mechanisms that can support biodiversity objectives. At the same time, it recognises that the effectiveness of these instruments depends on broader enabling conditions, including coherent regulatory and policy frameworks, biodiversity data and metrics, and investable project pipelines. These cross-cutting factors are therefore also discussed, where they are critical to understanding how financing instruments can be deployed effectively and at scale.

Complementary work on “Scaling Up Private Action for Nature: Opportunities for Development Co-operation and Finance” has been developed in parallel by the Development Co-operation Directorate, through collaboration and led by a collaboration between ENVIRONET and COP-PF4SD. It focuses on how development co-operation can scale private action for biodiversity by strengthening enabling environments, promoting private sector engagement and mobilising private finance in developing countries.

Another OECD forthcoming 2026 report provides a global estimate of public and private finance for biodiversity (from both domestic and international sources).

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Executive summary

Biodiversity and the ecosystem services it supports are the foundation of economies and human well-being. Their rapid decline poses systemic risks to supply chains, productivity and fiscal stability, demanding urgent policy and financial responses.

While the scale of the challenge is substantial, so too is the opportunity. A transition towards economies, businesses and financial systems that value and sustain biodiversity can reduce long-term risks, strengthen economic resilience and support new sources of value creation and investment across sectors.

The financing challenge

Finance is central to achieving the objectives of the Kunming–Montreal Global Biodiversity Framework (KMGBF), including its mission to halt and reverse biodiversity loss by 2030. Conserving ecosystems, restoring degraded landscapes and shifting towards more sustainable production and consumption patterns require sustained, well-directed investment. The Framework’s finance targets, including mobilising at least USD 200 billion annually from all sources, have created renewed momentum for national and international action.

However, current financial flows remain structurally misaligned with biodiversity objectives. The gap between investment in conservation and restoration and what is needed has been estimated at hundreds of billions of US dollars annually and growing. Moreover, public and private financial flows that drive biodiversity loss continue to far exceed investment in nature-positive activities.

Public finance currently accounts for most biodiversity-related expenditure, reflecting the public-good nature of ecosystem services. However, fiscal constraints, rising debt and competing policy priorities mean that governments cannot close this gap alone. Mobilising private finance at scale is therefore essential, but it requires coherent public policy, credible regulatory frameworks and institutional capacity.

Encouragingly, awareness of nature-related risks and opportunities is increasing across the financial sector. Impact investors are increasingly financing biodiversity and broader nature-related projects, while mainstream financial actors, such as institutional investors and insurers, are becoming more actively engaged. At the same time, innovation in nature finance is emerging, with new instruments, structuring approaches and digital tools that can support the mobilisation of capital towards biodiversity outcomes.

What this report does

This report examines how to scale and better align public and private finance for biodiversity. It reviews real economy and financial sector instruments, identifying practical policy options for governments and public finance institutions. It also clarifies the enabling conditions required to deliver credible and durable biodiversity outcomes.

Key messages and policy actions

Real economy and financial instruments are tools, not solutions. Payments for ecosystem services, nature markets, green bonds and other mechanisms can mobilise finance for biodiversity, but their effectiveness depends on the policy and institutional environment in which they operate. Where incentives are misaligned, regulation is weak or enforcement capacity is limited, financial innovation alone will not deliver biodiversity outcomes at scale. Coherent policy frameworks, well-functioning markets and effective institutions are therefore foundational.

Aligning financial flows is as important as mobilising new finance. Biodiversity loss is driven by persistent economic incentives that favour ecosystem degradation, including environmentally harmful subsidies, weak governance and the underpricing of ecosystem services. As a result, biodiversity-positive investments often operate against prevailing market signals. Reforming harmful financial flows is therefore at least as important as mobilising new finance.

Private finance is complementary to public finance – not a substitute. While private capital can play a critical role in financing biodiversity, many conservation and restoration activities generate limited or uncertain financial returns and require public and philanthropic funding. Public finance therefore remains indispensable – both as a primary source of funding for biodiversity outcomes that markets do not deliver, and as a catalyst to mobilise private capital where commercially viable opportunities exist.

Strong governance, co-ordination and partnerships are central to success. Scaling biodiversity finance requires co-ordination across governments, financial institutions, development actors, businesses, and communities, including Indigenous peoples and local communities. Policy incoherence remains a major barrier. Governments have a central role as system architects, aligning incentives, strengthening institutions and ensuring inclusive, credible and effective financing approaches. Strong partnerships are equally important for developing pipelines of investment-ready biodiversity projects, ensuring that finance can be deployed effectively and translated into positive biodiversity outcomes.

The following policy actions can support governments and public institutions in mobilising public and private finance for biodiversity:

1. **Align economic incentives with biodiversity objectives.** Reform environmentally harmful subsidies, scale up biodiversity positive taxes, fees and other economic incentives to correct market distortions and reward conservation, sustainable use and restoration of biodiversity.
2. **Create and strengthen markets for biodiversity.** Establish strong regulatory frameworks, issue biodiversity-specific sovereign bonds, and use demand-side levers (e.g. public procurement; biodiversity net gain requirements) to support the development of well governed markets and revenue streams for biodiversity outcomes.
3. **Improve investment conditions and share risks strategically.** Use concessional finance, credit enhancement, insurance and project preparation support to de risk investments and crowd in private capital, particularly where public additionality is clear and market barriers remain significant.
4. **Strengthen targets, data and metrics.** Strengthen biodiversity targets, metrics and data systems, to support robust and credible measurement of biodiversity outcomes and ensure environmental integrity.
5. **Enhance transparency, disclosure and accountability.** Improve the consistency, quality and comparability of disclosures, taxonomies and verification systems, including through digital tools, to reduce greenwashing risks and support informed financial decision making.
6. **Reinforce governance and lead by example.** Align public institutions, budgets and development finance with biodiversity goals, improve enabling systems and oversight, and facilitate co-ordination and market participation.

1. Mobilising finance for biodiversity: Synthesis and key messages

Biodiversity loss threatens economic resilience, financial stability and human well-being by undermining the ecosystem services on which societies and economies depend. Although the Kunming-Montreal Global Biodiversity Framework has strengthened international ambition, finance to halt and reverse biodiversity loss remains insufficient. This chapter synthesises the report's findings on how governments can scale and better align public and private finance for biodiversity. It emphasises that financial instruments alone cannot overcome distorted incentives, weak regulatory frameworks or limited institutional capacity, and that private finance complements rather than substitutes for public spending. Drawing on emerging experience across countries, sectors and asset classes, the chapter identifies priority actions to align incentives with biodiversity objectives, strengthen markets and investment conditions, improve data, metrics and disclosure frameworks, and reinforce governance and accountability. Together, these measures can help mobilise finance to achieve effective, equitable and durable biodiversity outcomes.

1.1. The biodiversity challenge

Biodiversity loss is accelerating, with significant implications for economic stability and long-term prosperity. Species are disappearing at rates unprecedented in human history, wildlife populations have declined on average by over 70% since 1970 (WWF, 2024^[1]), and terrestrial, freshwater and marine ecosystems are being degraded across much of the world (IPBES, 2019^[2]). These are not only environmental losses. Biodiversity underpins the ecosystem services on which the global economy and human well-being depend – pollination, soil formation, water purification, flood regulation and carbon sequestration.

As ecosystems deteriorate, the risks to businesses, investors and financial systems increase (OECD, 2021^[3]). These risks are not linear. Ecosystems can absorb stress up to a point, but beyond certain thresholds they may shift abruptly to less productive states. Such regime shifts – the collapse of a fishery, the dieback of a forest, or the transition of a lake into an oxygen-depleted state – are costly if not impossible to reverse and can generate cascading economic and social impacts. This underscores the value of early action and a precautionary approach. It also has direct implications for how nature-related risks are assessed, managed and priced.

Protecting and restoring biodiversity is therefore both an environmental imperative and a strategic investment in economic resilience. While the scale of the challenge is significant, so too is the opportunity. A transition toward economies and financial systems that value biodiversity can reduce long-run risks, strengthen resilience and unlock new sources of value and investment across sectors.

1.2. The financing challenge

Finance is central to meeting the mission of the Kunming-Montreal Global Biodiversity Framework (KMGBF) – to halt and reverse biodiversity loss. Conserving biodiversity, restoring degraded ecosystems, and transitioning toward more sustainable patterns of production and consumption all require sustained and well-directed financing. Investment is also needed in data infrastructure, governance capacity and institutional frameworks that effective biodiversity stewardship depends upon.

The adoption of the KMGBF in 2022 marked a step change in global ambition. Its finance-related commitments – including mobilising at least USD 200 billion annually from all sources – have renewed momentum for action at national and international levels. While consistent time-series data remain limited, available evidence indicates public (domestic and international) and private finance has increased this decade (OECD, 2026 Forthcoming^[4]). For example, annual private investment seeking both biodiversity benefits and financial returns exceeded USD 14 billion in 2025 – higher than previous years with data (Bennett et al., 2026^[5]).

Nonetheless, current financial flows remain deeply misaligned with biodiversity objectives. The gap between what is being spent and what is needed is estimated to be in the order of several hundred billion – and continues to widen (Paulson Institute, 2025^[6]). At the same time, expenditure and incentives that are harmful to nature significantly exceed investment in conservation and restoration, further increasing the scale of the challenge. Addressing these imbalances will require co-ordinated action across multiple policy areas and from a wide range of stakeholders.

Public finance currently accounts for most biodiversity-related expenditure, reflecting the public-good characteristics of many ecosystem services (OECD, 2026 Forthcoming^[4]). However, fiscal constraints, competing spending priorities and rising debt burdens mean that governments cannot bridge the financing gap alone. Mobilising substantially greater levels of private finance is therefore essential. Furthermore, given that many of the drivers of biodiversity loss originate in private-sector activities, aligning private

investment and business decisions with biodiversity objectives will be essential to achieving the goals of the Kunming-Montreal Global Biodiversity Framework.

Mobilising private finance requires coherent public policy, credible regulatory frameworks and capable institutions to create the conditions in which private capital can be deployed effectively and responsibly. At the same time, private finance can complement but not substitute for public finance. Many biodiversity outcomes generate limited or no direct financial returns and will continue to rely on public and philanthropic funding. Public finance therefore plays a dual role: as a primary source of funding where market-based returns are insufficient, and as a catalyst to crowd in private capital where viable opportunities exist.

1.3. Scope and purpose of this report

This report examines how to scale and better align public and private finance for biodiversity. It reviews a range of instruments and mechanisms (Table 1.1), assesses current practice, draws on emerging evidence and experience across countries and sectors, and identifies actionable policy options for governments, public finance institutions and financial market actors.

The landscape of biodiversity finance is evolving rapidly. New instruments, markets, partnerships and investment models are emerging across jurisdictions and asset classes. Financial institutions, corporations and investors are increasingly recognising both the risks associated with biodiversity loss and the opportunities linked to nature-positive transitions. But this landscape remains fragmented, with diverse approaches, limited standardisation and uneven levels of maturity. Countries developing biodiversity finance plans and seeking to accelerate progress towards national commitments and global goals need greater clarity on what is available, what works under which conditions, and how to structure interventions effectively.

This report aims to provide that clarity, with particular attention to financing instruments and the enabling conditions that determine whether financial flows deliver durable biodiversity outcomes. Chapter 2 provides an overview of the biodiversity finance landscape, including actors and their roles, and the broader policy context. Chapter 3 examines the range of biodiversity finance instruments and mechanisms, including how they function, the contexts in which they are most appropriate and the practical considerations for policy design. Chapter 4 focuses on how different instruments interact in practice, and how governments can create the conditions needed to mobilise and align public and private finance for biodiversity at scale. Key messages and good practice recommendations from the report are summarised below.

1.4. Key messages and good practice recommendations

1.4.1. Key messages

Finance alone cannot solve biodiversity loss – but increasing finance for biodiversity is essential. Mobilising finance for biodiversity must form part of the broader effort to align economies with nature. Finance instruments – including green bonds, blended finance vehicles, payments for ecosystem services and nature markets – are tools, not solutions in themselves. Their effectiveness depends on the policy and institutional environment in which they operate. Where market signals remain distorted, regulation is weak or enforcement capacity is limited, financial innovation alone is unlikely to deliver biodiversity outcomes at the scale required. Coherent regulatory and policy frameworks, effective institutions and well-functioning markets are therefore foundational to any biodiversity finance strategy.

Aligning existing financial flows is as important as mobilising new finance. The challenge is not only that biodiversity finance remains insufficient, but that much larger financial flows continue to drive biodiversity loss. Environmentally harmful subsidies, the persistent underpricing of ecosystem services,

and weak regulation and enforcement often make ecosystem degradation cheaper than conservation and sustainable use. As a result, biodiversity-positive investments operate against prevailing economic incentives. Reducing and redirecting harmful financial flows is therefore at least as important as mobilising new finance.

Public and private finance play complementary roles. Mobilising private capital is essential given the scale of biodiversity financing needs and growing pressure on public budgets. However, opportunities for commercially viable biodiversity investments remain limited. Many conservation and restoration activities still generate limited or uncertain financial returns and fail to attract significant private investment and thus will continue to depend on public and philanthropic funding. Public finance therefore remains indispensable, both for directly financing public-good biodiversity outcomes and for catalysing private investment where appropriate. Blended finance and risk-sharing instruments can help mobilise private capital, but only where barriers are clearly identified and public additionality is demonstrable.

Governance, equity and co-ordination are central to effective biodiversity finance. Delivering results at scale further depends on strong partnerships across actors – including public authorities, development actors, financial institutions, philanthropic organisations, companies, local governments, communities and indigenous peoples and project developers – bringing together complementary capital, expertise and mandates. Governments and supranational organisations play a central role not only as providers of finance, but as system architects shaping markets, aligning incentives and enabling investment. Strengthening policy coherence, improving risk assessment and disclosure, and co-ordinating action across stakeholders will be essential to mobilise finance effectively and ensure that it contributes to durable biodiversity outcomes.

1.4.2. Recommendations and policy options

The analysis points to six key recommendations and accompanying policy options for more effectively mobilising public and private finance at scale:

1. Align economic incentives with biodiversity objectives

Aligning economic incentives with biodiversity objectives requires correcting both market and government failures that continue to favour ecosystem degradation over conservation, sustainable use and restoration.

Policy options:

- Identify and reform environmentally harmful subsidies, prioritising those with the highest ecological damage and greatest market distortion.
- Introduce or strengthen biodiversity-relevant taxes and fees to internalise environmental externalities, with revenues transparently and efficiently directed towards biodiversity objectives where appropriate.
- Provide targeted and time-bound fiscal incentives for biodiversity investments (e.g. green bond issuance), underpinned by robust eligibility criteria and safeguards.
- Align public investment flows, particularly in extractive and land-use sectors, with biodiversity objectives.

2. Create and strengthen markets for biodiversity

Scaling private investment requires more reliable and credible revenue streams for biodiversity-positive activities. Well-designed markets and demand-side measures can help create these conditions, provided strong safeguards and governance frameworks are in place.

Policy options:

- Establish clear regulatory frameworks, such as biodiversity no net loss or net gain requirements embedded in mitigation hierarchies.
- Develop biodiversity-explicit sovereign green, sustainability and sustainability-linked bond frameworks, and issue sovereign bonds to establish credible benchmarks and generate demand-side signals for the broader market.
- Use public procurement, sectoral regulation and infrastructure policy to generate reliable demand for biodiversity-positive goods, services and outcomes.
- Support piloting of biodiversity credit schemes and other nature market mechanisms, ensuring government oversight, full transparency, independent verification, strong additionality requirements and environmental and social safeguards.

3. Improve investment conditions, including through risk-sharing

Public finance can help mobilise private investment where clear barriers exist and where public intervention delivers demonstrable additionality.

Policy options:

- Use concessional capital selectively and transparently to improve risk-return profiles and crowd in private investment where public additionality is clear.
- Deploy risk-mitigation instruments, including first-loss mechanisms, guarantees and other credit enhancement, to protect investors against specific, well-identified downside risks.
- Consider insurance products (e.g. political risk, performance or parametric cover) where market-based risk transfer is more appropriate than public risk absorption.
- Fund project preparation, aggregation and pipeline development to improve investment readiness.

4. Strengthen targets, data and metrics

Credible approaches to defining, measuring and verifying biodiversity outcomes are essential for scaling investment and maintaining market confidence.

Policy options:

- Set measurable national biodiversity targets aligned with the Kunming–Montreal Global Biodiversity Framework.
- Establish interoperable, streamlined and decision-useful metrics, taxonomies and monitoring frameworks, using tiered or minimum-quality approaches where full harmonisation is not yet feasible, while being transparent about what current measurement approaches do and do not capture.
- Strengthen national biodiversity data systems, including baseline data, spatial mapping and long-term ecological monitoring systems to ensure scientific robustness and ecological integrity in measurement approaches.
- Develop guidance on credible biodiversity key performance indicators and outcome indicators for financial instruments (e.g. sustainability-linked bonds), recognising the diversity of ecosystems and investment contexts and aligning with national and global biodiversity targets.

5. Enhance transparency, disclosure and accountability

More consistent and decision-useful information is needed to improve market confidence, reduce greenwashing risks and strengthen accountability for biodiversity outcomes.

Policy options:

- Expand the coverage and consistency of sustainable finance policies, including taxonomies and eligibility criteria, while maintaining clarity and usability for market participants.
- Support or require nature-related financial disclosures aligned with emerging international frameworks (e.g. TNFD), underpinned by robust biodiversity metrics.
- Ensure traceability of outcomes and adopt safeguards against greenwashing, including independent verification of outcomes and claims, with clear consequences for misrepresentation.
- Encourage the integration of biodiversity considerations into credit analysis, risk assessment and investment processes across the financial sector.

6. Reinforce governance and lead by example

Effective institutions and co-ordination mechanisms are essential for implementing biodiversity finance strategies and aligning public and private action.

Policy options:

- Align public budgets, official development finance and state-owned institutions with biodiversity objectives, underpinned by formal co-ordination mechanisms across finance, environment and sectoral ministries.
- Invest in enabling systems and tools such as guidance, public registries, monitoring, reporting and verification (MRV) systems – including digital tools – and institutional capacity for implementation, oversight and accountability.
- Establish robust biodiversity standards for nature markets and financial instruments (e.g. green bonds) to promote environmental integrity and market confidence.
- Develop project platforms, accelerators and matchmaking mechanisms to better connect projects with finance, including by increasing project visibility, standardising project definitions and information, and aggregating smaller projects into investable portfolios.
- Maintain sustained public investment in conservation and restoration, particularly where private returns are structurally limited and biodiversity is of national or global significance.

Table 1.1. Key instruments and mechanisms to mobilise public and private finance for biodiversity

Instruments and mechanisms	Description	Private finance mobilisation	Maturity	Scaling potential
Real economy instruments and mechanisms				
Biodiversity taxes and fees	Compulsory, unrequited payment (taxes) or required payment (fees) to general government levied on tax bases particularly relevant to biodiversity.	Indirect: shifts incentives by increasing costs of biodiversity-harmful activities, encouraging private capital reallocation.	Established	High: scalable across jurisdictions and sectors with sufficient political support and administrative capacity.
Biodiversity-positive subsidies	Government grants, loans, guarantees or preferential tax treatment that support activities with demonstrated positive biodiversity outcomes.	Indirect: improves risk-return profiles of biodiversity-positive activities, crowding in private co-investment.	Established	Medium to high: constrained by fiscal space but expandable via subsidy reform and improved targeting.
Payments for ecosystem services (PES)	Voluntary conditional payments to land or marine managers who maintain or enhance offsite ecosystem services. Financed by private beneficiaries, public actors on behalf of beneficiaries, or both.	Direct and indirect: direct when privately funded; indirect when public schemes create predictable revenue streams contributing to investable projects.	Established in some jurisdictions (public schemes); developing (private schemes)	Public PES medium to high: constrained by fiscal space but expandable via subsidy reform and improved targeting. Private PES: low to medium: constrained by transaction costs, buyer co-ordination and willingness of buyers.
Biodiversity offsets	Compensation for residual unavoidable impacts from development activities as part of the mitigation hierarchy. Delivered through mitigation banking, developer-led offsets or payments in lieu.	Direct and indirect: direct as regulatory obligations require private developers to fund biodiversity gains; indirect in mature investable offset markets.	Established in some jurisdictions	Medium to high: depends on the stringency, enforcement and coverage of regulatory no-net-loss or net-gain frameworks, and lending requirements.
Biodiversity credits for voluntary contributions or insetting	Often described as voluntary instruments to mobilise finance for positive biodiversity outcomes, and intended to represent measured units of biodiversity outcomes that are additional and durable.	Direct and indirect: direct as creates a revenue stream for conservation projects from voluntary private buyers; indirect via improved project bankability.	Nascent	Low to medium: currently constrained by few and fragmented standards, environmental integrity issues, and uncertain demand drivers.
Nature-based carbon credits	Carbon credits generated through conservation, sustainable use or restoration of ecosystems. Comprise both "land-based" and "blue-carbon" (i.e. coastal and marine) credits.	Direct: channels private climate finance into nature projects; indirect via improved project bankability.	Established for carbon; developing for biodiversity co-benefits	Medium to high: existing carbon market infrastructure provides scale potential, though growth depends on market credibility, demand, and integrity standards.
Financial sector instruments and financing mechanisms				
Use-of-proceeds bonds and loans	Debt instruments where proceeds are 'ring-fenced' for green activities. Includes green, blue and sustainability bonds and loans.	Direct: provides labelled debt capital for defined biodiversity expenditure programmes, attracting investors seeking verified environmental use of proceeds.	Established (general); developing (biodiversity-specific)	High: strong investor demand and market infrastructure, though biodiversity allocation remains limited.
Sustainability-linked bonds (SLBs) and loans (SLLs)	Performance-based debt instruments whose attributes (e.g. interest payments) are linked to pre-defined sustainability targets.	Indirect: financing proceeds are not earmarked for biodiversity projects; instead, financing terms are linked to biodiversity performance, which can influence corporate behaviour and capital allocation.	Established (general); nascent (biodiversity-specific)	Medium to high: Broad applicability across sectors, contingent on robust metrics, verification and broader investor confidence.
Environmental impact bonds and	Outcome-based debt where investor returns are contingent	Direct: attracts private upfront capital with returns tied to	Nascent	Low to medium: classical EIBs constrained by

Instruments and mechanisms	Description	Private finance mobilisation	Maturity	Scaling potential
other outcome-based bonds	on verified environmental outcomes.	outcomes. Classical EIBs typically rely on public or philanthropic outcome-payers, while market-linked variants may substitute or complement these payments with ecosystem service revenues.		structuring costs and need for committed outcome payer. Market-linked variants face different structuring challenges, including revenue uncertainty, market integrity requirements and price volatility, but may offer greater scalability where ecosystem service markets are sufficiently mature.
Crowd-based and retail debt instruments	Debt instruments that raise small-ticket capital from retail or mission-oriented investors, often via online platforms or community-based structures.	Direct: mobilises capital from retail investors not typically reached through institutional channels, broadening the investor base for biodiversity projects.	Established (general); nascent (biodiversity-specific)	Low to medium: suited to small-scale projects; aggregation needed for scale.
Private credit (institutional/non-bank)	Debt financing provided by institutional investors outside traditional banking channels, typically through privately negotiated loans to projects or companies, with tailored risk-return structures.	Direct: provides flexible debt financing to biodiversity-positive projects that may not meet standard bank lending criteria, filling gaps in the capital stack.	Established (general); nascent (biodiversity-specific)	High (conditional on pipeline and standardisation).
Public equity (listed markets, ETFs)	Equity investments in publicly listed companies through primary or secondary markets, including through exchange-traded funds.	Indirect: influences corporate behaviour via stewardship, valuation, and capital allocation.	Established (general); developing (biodiversity-specific)	High potential to influence capital allocation and corporate behaviour but less direct links to biodiversity outcomes.
Private equity	Equity investments in privately held companies or assets, typically through funds that provide active ownership and long-term capital to scale business models or projects.	Direct: deploys risk capital into unlisted nature-positive enterprises and conservation projects, providing growth financing unavailable through debt markets alone.	Established (general); developing (biodiversity-specific)	Medium to high: constrained by limited pipelines, long investment horizons, and uncertain exit opportunities.
Insurance mechanisms	Transfers financial or biophysical risk away from project developers and stabilises cash flows. Includes e.g. parametric insurance, resilience bonds	Indirect (catalytic): does not directly mobilise new finance flows, but can enable investment by reducing exposure to specific risks.	Established (general); nascent (biodiversity-specific)	Low to medium (standalone); high (as enabler).
Credit enhancement	Instruments through which public, philanthropic or concessional actors absorb or reallocate part of the downside risk to improve the risk-return profile of investments and facilitate capital mobilisation. Includes guarantees, first-loss tranches, concessional capital.	Indirect (catalytic): reduces barriers to private investment by absorbing first-loss risk or guaranteeing against default, enabling private capital to enter at acceptable return thresholds.	Established (general); developing (biodiversity-specific)	High: widely applicable across instruments where concessional capital is available.

Note: Classifications of maturity are indicative and based on current market development, policy frameworks, and observed deployment across jurisdictions. The maturity scale comprises nascent, developing, and established categories. Scale potential refers to the ability of an instrument to mobilise public or private finance at meaningful scale over the medium to long term. High scale potential does not necessarily imply high biodiversity integrity, effectiveness, or real-world impact.

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2. The biodiversity finance landscape and policy context

This chapter examines the international biodiversity finance landscape and highlights the dual challenge of mobilising additional resources for biodiversity and aligning existing public and private financial flows with biodiversity objectives. The chapter reviews progress in translating global commitments into national strategies and finance plans. It also maps the roles, motivations and interactions of actors across the real economy, financial sector and enabling environment. Public and private finance have complementary but distinct functions, with their respective contributions shaped by expected returns, risk tolerance, investment horizons, policy frameworks and the availability of credible, measurable and investable opportunities.

2.1. The biodiversity crisis and the urgency of action

Biodiversity – the diversity of genes, species and ecosystems – is declining at a rate unprecedented in human history. Extinction rates are estimated to be 35 times higher than the natural background rate of the past million years (Ceballos and Ehrlich, 2023^[1]). Between 1970 and 2020, the average population size of vertebrates – mammals, birds, reptiles, amphibians and fish – shrank on average by 73% (WWF, 2024^[2]). The scale of ecosystem degradation is equally striking: around 75% of land surfaces have been significantly altered, 66% of ocean area is experiencing increasing cumulative impacts, and over 85% of wetland area has been lost since 1700 (IPBES, 2019^[3]). Since 1970, fourteen out of eighteen assessed categories of ecosystem services have declined (IPBES, 2019^[3]).

These losses are not only environmental, but also pose material risks to economies, business and human well-being (IPBES, 2026^[4]) (OECD, 2021^[5]). Economies are embedded within nature (Dasgupta, 2021^[6]); they depend on ecosystem services such as pollination, soil fertility, water purification and carbon sequestration. These services underpin key economic functions, including food security, water availability, disaster risk reduction and long-term productivity. As ecosystems deteriorate, the natural systems on which economic activity depends are progressively eroded, with potentially very large economic consequences (World Bank, 2021^[7]; Van der Wilde, Hamley and Ching, 2025^[8]).

Biodiversity loss is increasingly recognised as financially material (FSB, 2024^[9]; Gardes-Landolfini et al., 2024^[10]). Biodiversity-related risks can propagate through nature-dependent sectors and value chains, creating credit, market, underwriting, liquidity and operational risks for financial institutions (OECD, 2023^[11]). Given feedback loops and the interconnectedness of financial institutions, such risks may amplify and propagate, increasing the potential for systemic financial instability (FSB, 2024^[9]). Emerging evidence suggests that some lenders are beginning to reflect borrowers' biodiversity-related exposures in loan pricing (Becker, Di Girolamo and Rho, 2023^[12]); however, overall, nature-dependent industries and their financiers remain insufficiently prepared to identify, assess and manage nature-related financial risks (Gardes-Landolfini et al., 2024^[10]).

As ecosystems approach critical thresholds, the risk of irreversible change rises. Once ecological tipping points are crossed, ecosystems may shift into alternative, degraded states that are difficult or costly to reverse, significantly undermining the effectiveness and affordability of restoration efforts (Folke et al., 2004^[13]; IPBES, 2018^[14]). Such regime shifts could generate abrupt and cascading impacts that extend well beyond individual ecosystems, disrupting supply chains, markets and livelihoods at regional or, in some cases, global scales (Leadley et al., 2014^[15]; OECD, 2021^[5]; OECD, 2022^[16]). Preventing further biodiversity loss and restoring degraded ecosystems is therefore not only an environmental imperative, but also a necessary investment in economic resilience.

2.2. Finance as a central lever for biodiversity outcomes

Addressing the biodiversity crisis will require action across multiple policy domains such as economic and land-use planning, agriculture, fisheries and infrastructure, environmental policy, trade and international co-operation. Finance plays a central and largely cross-cutting role. Adequate, predictable and well-directed financial resources are needed to ensure the effective management of protected areas, restore degraded ecosystems, support wildlife recovery and drive the transition of key sectors towards more sustainable production and consumption practices. Finance is also needed for the enabling systems that support biodiversity, including biodiversity data, monitoring and reporting systems, enforcement and compliance.

The challenge is not only the overall level of finance, but also its allocation, effectiveness and alignment with biodiversity objectives. Underinvestment in natural capital, combined with incentives that continue to

reward biodiversity loss, has allowed degradation to persist despite public and private decision makers' growing awareness of the risks of biodiversity loss. In a context of constrained public budgets and competing priorities, the scale, composition and quality of financial flows are critical determinants of whether countries can halt and reverse biodiversity loss.

2.3. The international policy response and finance commitments

The adoption of the Kunming–Montreal Global Biodiversity Framework (KMGBF) at CBD COP15 in 2022 marked a turning point for biodiversity action and finance. It set four goals for 2050 and 23 action-oriented targets for 2030, with an overall mission to halt and reverse biodiversity loss by 2030 (CBD, 2022^[17]). Several targets explicitly address the role of finance and economic systems, including the mobilisation of financial resources, the reform of environmentally harmful incentives and the alignment of public and private financial flows with biodiversity objectives (Box 2.1).

To support the effective implementation of the KMGBF, CBD COP15 also adopted a new Resource Mobilisation Strategy (Decision 15/7), encouraging Parties to develop national biodiversity finance plans, based on their National Biodiversity Strategies and Action Plans (NBSAPs). This was followed by a revised Resource Mobilisation Strategy for the 2025–30 period, adopted at CBD COP16.2 in February 2025. The revised Strategy provides a framework to mobilise finance through a mix of public funding, private sector contributions, philanthropic resources, multilateral development banks and blended finance mechanisms (CBD, 2025^[18]).

Box 2.1. Finance-related targets in the Kunming–Montreal Global Biodiversity Framework

Target 14: Ensure the full integration of biodiversity and its multiple values [...] progressively aligning all relevant public and private activities, fiscal and financial flows with the goals and targets of this framework.

Target 15: Take legal, administrative or policy measures to encourage and enable business, and in particular to ensure that large and transnational companies and financial institutions: (a) Regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity, including with requirements for all large as well as transnational companies and financial institutions along their operations, supply and value chains and portfolios; (b) Provide information needed to consumers to promote sustainable consumption patterns; in order to progressively reduce negative impacts on biodiversity, increase positive impacts, reduce biodiversity-related risks to business and financial institutions, and promote actions to ensure sustainable patterns of production.

Target 18: Identify by 2025, and eliminate, phase out or reform incentives, including subsidies, harmful for biodiversity, in a proportionate, just, fair, effective and equitable way, while substantially and progressively reducing them by at least \$500 billion per year by 2030, starting with the most harmful incentives, and scale up positive incentives for the conservation and sustainable use of biodiversity.

Target 19: Substantially and progressively increase the level of financial resources from all sources in an effective, timely and easily accessible manner, including domestic, international, public and private resources, in accordance with Article 20 of the Convention, to implement national biodiversity strategies and action plans by 2030 mobilizing at least USD 200 billion per year, including by:

- a. Increasing total biodiversity-related international financial resources from developed countries, including official development assistance, and from countries that voluntarily assume obligations of developed country Parties, to developing countries, in particular the least developed countries and small island developing States, as well as countries with economies

in transition, to at least USD 20 billion per year by 2025, and to at least USD 30 billion per year by 2030;

- b. Significantly increasing domestic resource mobilization, facilitated by the preparation and implementation of national biodiversity finance plans or similar instruments according to national needs, priorities and circumstances
- c. Leveraging private finance, promoting blended finance, implementing strategies for raising new and additional resources, and encouraging the private sector to invest in biodiversity, including through impact funds and other instruments;
- d. Stimulating innovative schemes such as payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms with environmental and social safeguards;
- e. Optimizing co-benefits and synergies of finance targeting the biodiversity and climate crises;
- f. Enhancing the role of collective actions, including by indigenous peoples and local communities, Mother Earth centric actions and non-market-based approaches including community based natural resource management and civil society co-operation and solidarity aimed at the conservation of biodiversity;
- g. Enhancing the effectiveness, efficiency and transparency of resource provision and use.

Source: (CBD, 2022^[17]), Kunming-Montreal Global Biodiversity Framework; www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf.

Parties to the CBD are translating international commitments under the KMGBF into concrete national targets and actions through their NBSAPs. Though revised and updated NBSAPs were due by CBD COP16 in October 2024, as of May 2026, 101 Parties (c. 51%) had submitted updated NBSAPs to the CBD. A review of selected updated NBSAPs shows that countries have adopted widely differing approaches to translating KMGBF Target 19 into national strategies, with significant variation in the level of detail provided (Table 2.1). Overall, the national level finance targets are broad and high-level, providing little insight on how governments intend to mobilise public and private finance to implement their NBSAPs effectively.

In addition to NBSAPs, various developing countries have developed national biodiversity finance plans with support from UNDP BIOFIN. As of December 2025, 39 developing countries had completed such plans with others embarking on the process. A handful of developed countries (e.g. Belgium, Finland, Luxembourg and the Netherlands) have also more recently committed to preparing such finance plans. The BIOFIN Workbook 2024 Finance for Nature provides guidance to design and implement national biodiversity finance plans (BIOFIN, 2024^[19]).

Table 2.1. Selected examples of KMGBF Target 19 related commitments in updated NBSAPs

Country	KMGBF Target 19 related language in NBSAPs
Australia	No specific reference related to Target 19.
Canada	The Strategy provides a brief overview of the current status of finance (e.g. CAD 12.5 billion in federal funding in recent years) and states that to further advance action on Target 19, the federal government will continue to identify how it can better use its funding instruments to attract private sector resources for a whole-of-society effort to protect biodiversity.
Colombia	Goal 6 states that by 2030 Colombia will have implemented sustainable finance models that mobilise resources from all sources and in the long-term, guaranteeing transformational impacts in the territories through the conservation and sustainable use of biodiversity.
France	On public financing, the Strategy refers to the widespread adoption of the green budgeting approach; and a commitment to increase the budget by EUR 264 million/year (in addition to continued resources for e.g. the brownfield fund [EUR 300 million/yr] and rewilding [EUR 100 million/year]). Private funds will be mobilised by e.g. strengthening innovative means of financing nature and NbS such as the Low Carbon label or natural restoration and renaturation sites (SNRRs). Reference is also made to the biodiversity lottery ("Mission Nature") launched in 2023.
Netherlands	On public national financing, the Strategy notes that EUR 1.34 billion was spent on biodiversity and landscape, approximately EUR 5 billion was allocated to the agriculture sector and EUR 500 million is intended for nature restoration. It states that no additional public funds have been earmarked for biodiversity, and that a National Biodiversity Finance Plan will be developed. On private financing, the Strategy states the government will continue to examine how to encourage private finance through mechanisms such as investments, loans and insurance. On innovative finance, it will focus on knowledge development for public-private finance (blended finance), bio-credits and payments for ecosystem services. For further detail, see the NBSAP.
New Zealand	The relevant 2050 objective is that governance, legislation and funding systems are in place and enable delivery of the strategy outcomes. The related 2025 goal states that sufficient on-going resources and funding have been secured from multiple sources to implement the strategy.
Norway	Nationally, the Government commits to develop a method to measure investments in the conservation and sustainable use of biodiversity in order to report on national resource use from nature, and to actively follow developments in innovative financing mechanisms to better facilitate investments in nature-positive projects and solutions and develop incentives for businesses and financial institutions' mobilisation of private finance for nature. The objective established for Target 19 is stated as: The Norwegian Climate and Forest Initiative is extended until 2035. Norway will strive to mobilise new resources globally, in particular from the private sector. Norway will strive for more synergies between climate finance and nature finance to more efficiently and effectively achieve targets in both fields.
United Kingdom	Annex A in the UK's NBSAP for 2030 provides the list of UK national targets, which are nearly identical to those of the KMGBF Targets. UK Target 19 states: The UK will contribute to substantially and progressively increasing the level of financial resources from all sources (...see KMGBF Target 19 for the rest of the text).

Source: CBD Online Reporting Tool (NBAPS) <https://ort.cbd.int/nbsaps>.

2.4. The biodiversity finance shortfall and misaligned flows

Despite growing recognition of the need for action, current policies and finance flows remain insufficient to drive the transformative change required. Financial flows that harm biodiversity continue to outweigh those that support it, and recent studies estimate a biodiversity finance shortfall of hundreds of billions of dollars annually (Paulson Institute, 2025^[20]) (Paulson Institute, TNC, Cornell, 2020^[21]; Waldron et al, 2020^[22]). With only a few years left to achieve the KMGBF mission, countries face mounting pressure to accelerate implementation and secure the financing needed for their NBSAPs.

Public finance currently accounts for most biodiversity funding (OECD, 2020^[23]). Given the public good characteristics of biodiversity and ecosystem services, ensuring sufficient public spending for biodiversity will remain fundamental. However, strained public budgets and competing priorities mean that public resources alone cannot meet global biodiversity objectives. Mobilising private finance at scale is therefore essential but requires effective public policies that create the necessary incentives and enabling environment for change (Flammer, Giroux and Heal, 2025^[24]; zu Ermgassen et al., 2025^[25]). Biodiversity finance also cannot substitute for strong policy frameworks and well-enforced regulation, which remain fundamental to durable outcomes.

2.5. Mobilising and aligning finance: a dual challenge

Both mobilising additional finance for biodiversity (“financing green”) and aligning existing financial flows with biodiversity objectives (“greening finance”) are essential and mutually reinforcing. These concepts, however, are distinct. Alignment does not always imply mobilisation: for example, measures such as divestment from companies linked to deforestation or the removal of harmful subsidies can redirect existing flows away from damaging activities without necessarily mobilising new biodiversity finance. Conversely, mobilisation does not always ensure alignment; for example, poorly implemented biodiversity offsets or nature-based carbon credits may mobilise resources yet still result in misaligned financial flows and ultimately net biodiversity loss. Certain measures can achieve both objectives. For instance, reforming harmful subsidies and reallocating part of the savings to biodiversity-positive activities reflects both alignment and mobilisation.

In practice, mobilisation and alignment cannot be pursued in isolation. Mobilising additional finance will be insufficient if other parts of the financial system continue to fund activities that drive biodiversity loss. While global estimates of harmful versus beneficial flows are complex and inevitably vary, they consistently indicate that current financial flows and incentives for activities harmful to biodiversity far exceed those promoting its conservation, sustainable use and restoration. Equally, aligning finance with biodiversity goals will not suffice unless new sources of capital are leveraged. Progress will therefore require a dual strategy of mobilising (Target 19) and aligning (Targets 14 and 18). This will involve co-ordinated action across governments, financial institutions, corporates, communities and civil society, supported by robust policy signals and coherent regulatory frameworks. Although this report focuses primarily on finance mobilisation, alignment is inevitably part of the discussion because many enabling conditions – such as clear policy, robust metrics, disclosure and MRV systems – support both goals.

2.6. Actors, their roles and motivations in biodiversity finance

Biodiversity finance involves a diverse set of actors operating across two interconnected spheres: the real economy and the financial sector (Figure 2.1). Cutting across these are a range of enabling actors that are critical to supporting the mobilisation and allocation of biodiversity finance.

2.6.1. *Real economy*

The real economy includes sectors such as agriculture, forestry, fisheries, tourism and infrastructure, which depend on biodiversity and ecosystem services for production, but are also major drivers of biodiversity loss through land-use change, pollution and over-exploitation. The real economy is where most biodiversity pressures arise and where policy, management and finance decisions translate most directly into biodiversity outcomes. Within the real economy, business dependencies and impacts on biodiversity give rise to physical risks, transition risks and broader systemic risks. Physical risks arise when the degradation of ecosystem services affects production, revenues or asset values, for example through declining pollination, water scarcity or soil degradation. Transition risks arise from policy, regulatory, market and liability developments associated with efforts to halt biodiversity loss, such as restrictions on land conversion, deforestation-linked commodities or pollution. Systemic risks are linked to broader ecological and economic instability (IPBES, 2026^[4]). Risks depend on a company or sector’s exposure and vulnerability: exposure reflects the extent to which activities and value chains depend on nature, while vulnerability captures their sensitivity to nature-related change and their capacity to adapt. Risks are therefore amplified where high exposure coincides with high vulnerability.

At the same time, improved biodiversity performance can create opportunities, including cost savings through more efficient resources use, enhanced resilience, access to new markets and the development of nature-based products and services (IPBES, 2026^[4]). New business opportunities may also emerge as

companies develop technologies, data services and advisory solutions that enable other businesses to reduce biodiversity impacts, manage dependencies and comply with evolving policy and market requirements (OECD, 2025^[26]).

Public actors within the real economy – including national and sub-national governments, public utilities and co-operatives – play a central role through land-use planning, public infrastructure provision, protected-area management and the delivery of biodiversity-related public goods. Private real-economy actors, such as corporates, landholders, non-governmental organisations and indigenous and local communities, implement biodiversity-relevant activities on the ground and are responsible for converting biodiversity objectives into operational projects. Together, the decisions of public and private real-economy actors shape both the risk-return profile of economic activity and the pipeline of potential investment opportunities, thereby generating demand for finance to support changes in practices, restoration initiatives and nature-based activities.

2.6.2. Financial sector

The financial sector allocates capital to the real economy through a range of channels, including investment, lending, insurance and risk-transfer mechanisms. Financial actors – such as finance ministries, multilateral development banks and funds, as well as commercial banks, institutional investors, insurers, philanthropic foundations and high-net-worth individuals – provide capital through instruments including grants, loans, bonds, equity, guarantees and insurance. While financial institutions typically do not manage natural assets directly, they influence real-economy behaviour by allocating capital, pricing risk, setting conditions for access to finance and responding to policy, regulatory and market signals.

Risks and opportunities that arise in the real economy can transfer to the financial sector. Biodiversity-related business risks may materialise for financial actors as higher credit risk, asset impairment, increased insurance losses, market volatility or liquidity pressures. Conversely, business-level opportunities linked to biodiversity conservation, restoration and sustainable use can translate into investment opportunities, new revenue streams and more resilient portfolios, particularly where revenues are credible, risks are managed and policy frameworks are supportive.

Engagement by financial actors in biodiversity-related activities depends on several enabling conditions, including risk-return expectations, regulatory clarity, data availability and the existence of credible, investable project pipelines. These conditions vary across financial actors and instruments and determine how, where and at what scale biodiversity finance is mobilised. Differences in investment horizon, risk tolerance and return requirements further shape which forms of capital can engage with which biodiversity-related activities.

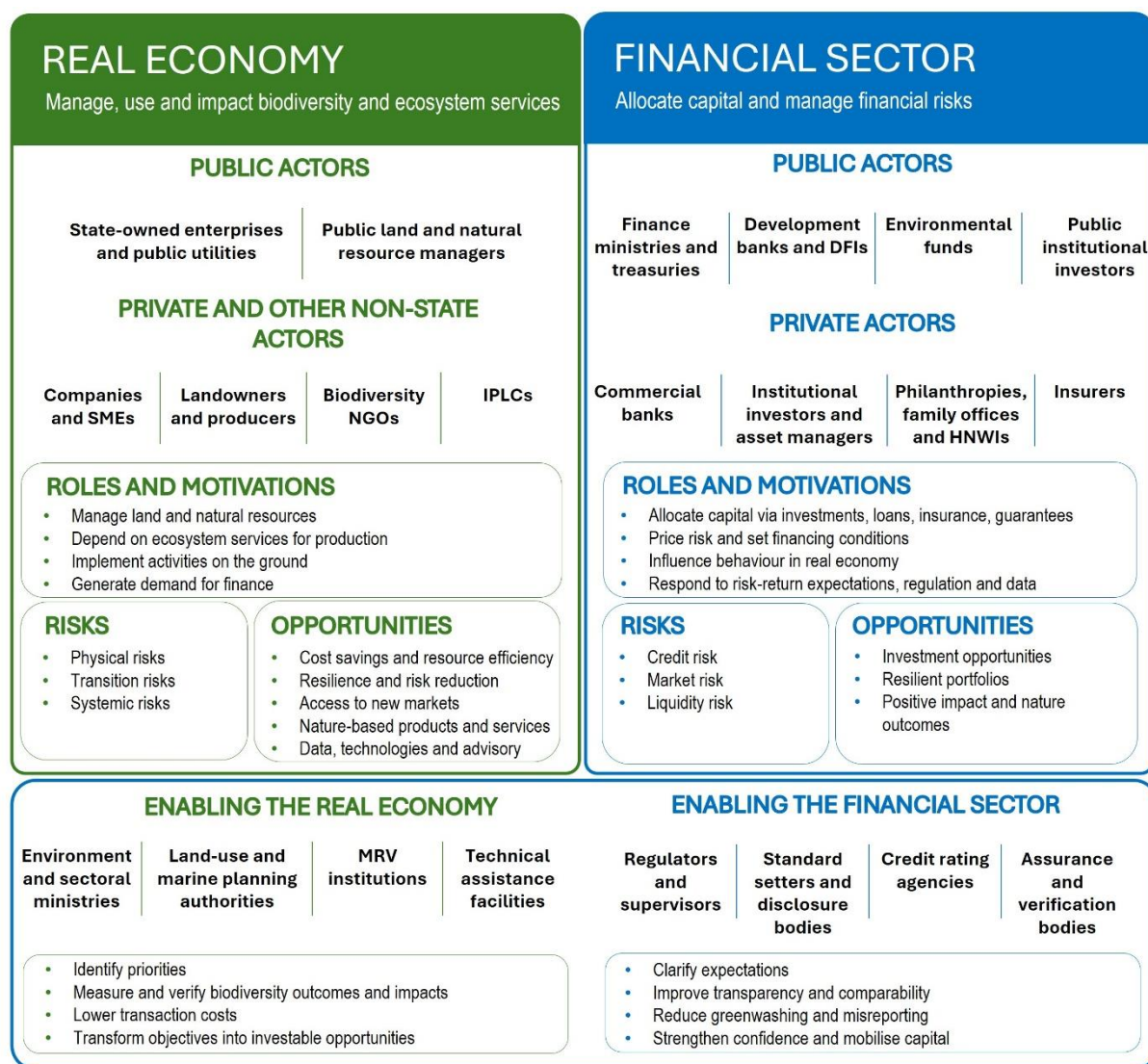
2.6.3. Enabling actors

A range of enabling actors play a critical role in underpinning and bridging the real economy and the financial sector. On the real economy side, environment and sectoral ministries, land-use planning authorities, and monitoring, reporting and verification institutions are essential for identifying priorities, reducing information asymmetries, lowering transaction costs and transforming biodiversity objectives into investable opportunities. On the financial side, regulators and supervisors, standard-setting and disclosure bodies, credit rating agencies, and accreditation, assurance and verification bodies help establish a credible enabling environment by clarifying expectations, improving comparability and reducing the risk of greenwashing and misreporting.

Several international frameworks and initiatives are shaping practice in this space. For example: the Taskforce on Nature-related Financial Disclosures (TNFD) is developing disclosure standards for nature-related risks and opportunities; the Network for Greening the Financial System (NGFS) is advancing supervisory guidance on nature-related financial risks; the Nature Positive Initiative is establishing the

scientific and measurement foundations for defining and tracking progress toward nature positive outcomes; the Science Based Targets Network (SBTN) provides a framework for companies to set science-based targets for nature; and relevant International Organization for Standardization (ISO) standards are establishing technical benchmarks for biodiversity measurement and management.

Figure 2.1. The landscape of actors in biodiversity finance



Note: DFIs = development finance institutions. HNWI = high net worth individuals. IPLCs = Indigenous Peoples and local communities. SMEs = Small and medium-sized enterprises.

2.6.4. Complementary but distinct roles

Public and private actors play complementary but distinct roles in financing biodiversity. Public finance is indispensable for activities that deliver biodiversity primarily as a public good and typically lack direct private financial returns, such as protected-area management, species conservation and biodiversity monitoring. Public actors also shape market conditions through regulation, land-use planning, fiscal instruments and targeted financial support. Private capital plays a critical role in complementing public

resources and scale biodiversity action, particularly by supporting the adoption of more sustainable business models, technologies and practices.

Incentives and engagement differ across private actors and along the investment spectrum. Investors respond primarily to risk-return considerations and regulatory signals, while corporates focus on landscapes linked to their operations or supply chains (Fabre, 2025^[27]; Löfqvist and Ghazoul, 2019^[28]). Corporate biodiversity investments are often driven by the need to enhance supply chain resilience and sustainability, manage operational, regulatory and reputational risks, and meet net-emission-reduction commitments (Löfqvist and Ghazoul, 2019^[28]; Löfqvist, Garrett and Ghazoul, 2023^[29]; zu Ermgassen et al., 2025^[25]). While risk considerations remain the dominant driver, interest is growing in biodiversity-related investment opportunities.

Risk-return expectations and investment horizons vary across actors and instruments, shaping which forms of capital can be mobilised (Table 2.2). Activities such as protected area management typically offer no or little direct financial return and rely on public budgets, multilateral funds or philanthropy. Many other interventions, such as habitat restoration and agroforestry pilots, currently deliver below-market financial returns while delivering substantial environmental and social benefits, including public good benefits. These models can attract impact investors and concessional official development finance, particularly where risks are mitigated through guarantees, blended finance or other forms of catalytic public support. A further segment of biodiversity finance can achieve market-rate financial returns under appropriate policy and market conditions. Examples include certified sustainable commodities (e.g. forestry and fisheries) with explicit biodiversity objectives and well-established environmental markets such as the US Wetland Mitigation Banking scheme (OECD, 2025^[26]).

Much of the current biodiversity finance pipeline is driven by impact investors, development finance institutions and other actors able to operate with higher risk tolerance or accept below-market financial returns, often through blended or concessional financing structures. While many biodiversity-related investments have time horizons that are compatible with those of institutional investors and offer opportunities for portfolio diversification and increased resilience to nature-related risks, broader participation by these actors depends on several factors. These include market maturity, policy stability, the availability of sufficiently scalable and investable opportunities, predictable revenue streams, liquidity, and robust and credible frameworks for measuring biodiversity outcomes. As a result, institutional investor engagement in biodiversity finance remains at an early stage.

Table 2.2. Typical financial return expectation per actor

Type of return	Potential financing entity
No direct financial (or private) returns – expected social return and possible indirect economic benefits	• Domestic public finance • Development co-operation (bilateral and multilateral ODA) • Multilateral funds (e.g. Cali Fund) • Philanthropy
Financial returns, but below market rate	• National development banks • Development finance institutions • Impact investors
Market-rate returns	• Banks (retail, corporate, private) • Institutional investors • Corporate sector

Source: Authors, adapted from (OECD, 2023^[30]), Scaling Up Adaptation Finance in Developing Countries: Challenges and Opportunities for International Providers, <https://doi.org/10.1787/b0878862-en>.

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3. Biodiversity finance instruments and mechanisms

This chapter provides a systematic analysis of the principal instruments and mechanisms used to mobilise public and private finance for biodiversity. Drawing on literature, market data and case studies from around the world, it examines the characteristics, applications and maturity of a wide range of approaches across the real economy and financial sectors, including fiscal measures, payments for ecosystem services, nature markets, debt and equity instruments, and insurance and risk-sharing mechanisms. The chapter assesses their contribution to biodiversity finance to date and reviews the available evidence on their effectiveness, scalability and environmental integrity. It also identifies key challenges, opportunities and good practices for scaling up finance and improving biodiversity outcomes.

Addressing biodiversity loss requires mobilising finance at scale across a wide range of activities, from protected area management and ecosystem restoration to changes in production systems and supply chains. A growing array of instruments and mechanisms are mobilising public and private finance for biodiversity. These include instruments developed specifically to support biodiversity outcomes, such as payments for ecosystem services and conservation/environmental impact bonds, and more traditional financial instruments adapted to biodiversity objectives, such as green bonds with use-of-proceeds supporting the conservation, sustainable use or restoration of biodiversity (Table 3.1).

These instruments work within and across the real economy and the financial sector. Real economy instruments work primarily by changing the economic conditions under which production, consumption and resource-management decisions are made; either by generating revenue streams from biodiversity-positive activities, raising the cost of harmful ones or compensating land managers for positive biodiversity outcomes. Financial sector instruments work by determining how capital is raised, structured and allocated toward biodiversity-relevant activities, once viable economic opportunities exist. The two categories are mutually dependent: real economy instruments create the revenue streams and price signals that make biodiversity investments commercially viable; financial instruments determine whether capital can flow toward those opportunities at scale. This chapter provides a systematic analysis of the key financing instruments and mechanisms for biodiversity across the real economy and financial sectors.

Table 3.1. Instruments used to mobilise biodiversity finance

Instrument	Description	Finance type	Private finance mobilisation	Application for biodiversity
Real economy instruments				
Biodiversity taxes and fees	Compulsory, unrequited payment (taxes) or required payment (fees) to general government levied on tax bases particularly relevant to biodiversity.	Public	Indirect: raises the cost of biodiversity-harmful activities, incentivising reallocation of private capital toward less damaging alternatives.	Generating predictable public revenue; internalising environmental externalities; funding conservation and restoration programmes when revenues are earmarked.
Biodiversity subsidies	Government grants, loans, guarantees and preferential tax treatment that increase an activity or the use of something that has a proven, specific positive impact on biodiversity.	Public	Indirect: improves risk-return profiles of biodiversity-positive activities, making them more attractive to private co-investment.	Incentivising conservation, sustainable land-use practices and restoration; supporting early-stage project viability where private returns are insufficient without support
Payments for ecosystem services (PES)	Voluntary conditional payments to land or marine managers who maintain or enhance offsite ecosystem services. Financed by private beneficiaries, public actors on behalf of beneficiaries, or both.	Public, private or hybrid	Direct when private beneficiaries pay for ecosystem services; indirect where public PES schemes generate revenue streams that improve the investability of landscape-scale projects.	Incentivising sustainable land and ocean management where clear ecosystem service beneficiaries can pay for continued service provision (e.g. downstream water users or companies benefiting from clean water).
Biodiversity offsets (compensation)	Compensation for residual unavoidable impacts from development activities, embedded within the mitigation hierarchy. Delivered through mitigation banking, developer-led offsets or payments in lieu.	Primarily private	Direct: regulatory obligations require private developers to fund biodiversity gains; Indirect: in mature markets, offset providers may access private capital markets for upfront financing.	Managing residual impacts of development under strong regulatory frameworks; ensuring compliance with “no net loss” or “net gain” requirements.
Biodiversity credits for voluntary contributions or inseting	Often described as voluntary instruments to mobilise finance for positive biodiversity outcomes; intended to represent measured units of biodiversity outcomes that are additional and durable.	Primarily private	Direct: creates a demand-driven revenue stream for conservation projects from voluntary private buyers; Indirect: revenue streams enable project developers to access further private capital.	Incentivising private contributions to conservation and restoration; increasing resilience of corporate supply chains; piloting market-based approaches and corporate engagement

Instrument	Description	Finance type	Private finance mobilisation	Application for biodiversity
Nature-based carbon credits	Carbon credits generated through conservation, sustainable use or restoration of ecosystems. Comprise both “land-based” and “blue-carbon” (i.e. coastal and marine) credits.	Primarily private	Direct: channels private climate finance into nature projects; Indirect: in more established markets, revenue streams enable project developers to access further private capital.	Mobilising private finance for protection and restoration of forests, peatlands and other high-carbon ecosystems; and for reforestation (and selected afforestation with biodiversity objectives and appropriate safeguards).
Financial instruments				
<i>Debt</i>				
Use-of-proceeds bonds and loans	Debt instruments where proceeds are ‘ring-fenced’ for green activities. Includes green, blue and sustainability bonds and loans.	Public or private	Direct: provides labelled debt capital for defined biodiversity expenditure programmes, attracting investors seeking verified environmental use of proceeds	Financing large-scale public or corporate investment programmes; front-loading capital for planned biodiversity-related expenditure
Sustainability-linked bonds (SLBs) and loans (SLLs)	Performance-based debt instruments whose attributes (e.g. interest payments) are linked to pre-defined sustainability targets.	Public or private	Direct: links financing terms to biodiversity-related performance targets, incentivising improved corporate performance.	Aligning issuer behaviour with biodiversity performance commitments; signalling ambition rather than earmarking specific biodiversity expenditure.
Environmental impact bonds and other outcome-based bonds	Outcome-based debt where investor returns are contingent on verified environmental outcomes.	Public, private or hybrid	Direct: attracts private upfront capital with returns tied to outcomes. Classical EIBs typically rely on public or philanthropic outcome-payers, while market-linked variants may substitute or complement these payments with ecosystem service revenues.	Testing innovative conservation approaches and nature-based solutions; financing restoration and conservation projects with measurable outcomes; outcome-based pilots where public payers want to transfer performance risk.
Crowd-based and retail debt instruments	Debt instruments that raise small-ticket capital from retail or mission-oriented investors, often via online platforms or community-based structures.	Private	Direct: mobilises capital from retail investors not typically reached through institutional channels, broadening the investor base for biodiversity projects.	Financing small-scale or community-level projects; engaging retail or mission-oriented investors.
Private credit (institutional and non-bank debt)	Debt financing provided by institutional investors outside traditional banking channels, typically through privately negotiated loans to projects or companies, with tailored risk-return structures.	Private	Direct: provides flexible debt financing to biodiversity-positive projects that may not meet standard bank lending criteria, filling gaps in the capital stack.	Financing bankable biodiversity assets and nature-positive business models at scale, often alongside risk-sharing.
<i>Equity</i>				
Public equity (listed markets, ETFs)	Equity investments in publicly listed companies through primary or secondary markets, including through exchange-traded funds.	Private	Mainly indirect: secondary market transactions do not directly finance biodiversity projects, but investor stewardship and portfolio allocation can influence corporate behaviour and incentivise nature-positive business practices.	Influencing corporate behaviour and capital allocation through stewardship, engagement and portfolio selection rather than direct project finance.
Private equity	Equity investments in privately held companies or assets, typically through funds that provide active ownership and long-term capital to scale business models or projects.	Private	Direct: deploys risk capital into unlisted nature-positive enterprises and conservation projects, providing growth financing unavailable through debt markets alone.	Directly financing real economy conservation, sustainable commodity and nature-positive enterprises through active ownership; includes venture capital, growth equity and impact funds.
<i>Insurance and risk transfer</i>				
Insurance mechanisms	Transfers financial or biophysical risk away from project developers and stabilises cashflows. Includes	Primarily private	Catalytic: does not directly mobilise new finance flows, but can enable investment by	Managing climate- and nature-related risks in biodiversity projects; enhancing investment

Instrument	Description	Finance type	Private finance mobilisation	Application for biodiversity
	e.g. parametric insurance, resilience bonds etc.		reducing exposure to specific risks.	resilience and protecting livelihoods; most effective as part of a broader financing structure.
Credit enhancement	Instruments through which public, philanthropic or concessional actors absorb or reallocate part of the downside risk to improve the risk-return profile of investments and facilitate capital mobilisation. Includes guarantees, first-loss tranches, concessional capital.	Primarily public or philanthropic	Catalytic: reduces barriers to private investment by absorbing first-loss risk or guaranteeing against default, enabling private capital to enter at acceptable return thresholds.	Crowding in private capital where projects generate some return but insufficient to attract investment unaided.

Note: This is a non-exhaustive list of instruments, focusing on those covered in the report. "Finance type" reflects how flows are typically classified in biodiversity finance accounting and tracking frameworks, not the ultimate source of invested capital. Private finance mobilisation describes how each instrument attracts or obliges private capital, distinguishing between direct mobilisation (where the instrument itself generates a private capital flow) and indirect mobilisation (where the instrument improves conditions that make private investment more likely). Application describes the primary purpose of each instrument in a biodiversity context and the conditions under which it is most effective.

3.1. Real economy instruments and mechanisms – biodiversity-positive incentives and nature markets

Biodiversity-positive incentives and associated nature markets work primarily by pricing positive or negative externalities. By changing the economic conditions under which production, consumption, and resource-management decisions occur, they influence behaviour in biodiversity-relevant sectors and direct finance towards beneficial activities or away from harmful ones. They support biodiversity finance through three main approaches (OECD, 2025^[1]). First, instruments such as PES, biodiversity offsets, voluntary biodiversity credits, and nature-based carbon credits generate cash flows from ecosystem restoration and sustainable natural resource management. These revenues can increase project bankability, helping to attract private capital. Second, environmental taxes and fees raise revenues for governments that can be earmarked for biodiversity-related spending. Third, by internalising externalities these instruments alter relative prices, costs and returns. This can affect profitability, asset values and credit risk, influencing investment and lending decisions.

This section focuses on the instruments most directly relevant to mobilising finance for biodiversity: taxes and fees; payments for ecosystem services; biodiversity subsidies; biodiversity offsets; nature-based carbon credits; and biodiversity credits. Other real economy instruments, including regulatory standards, permitting regimes and biodiversity-relevant tradable permits, also internalise environmental costs and reduce financing needs, but do not typically generate revenues or mobilise finance directly and are addressed in Chapter 4.

3.1.1. Taxes and fees

Biodiversity-related taxes apply the Polluter Pays Principle (PPP) to help address the drivers of biodiversity loss. They are a compulsory, unrequited payment to government whose tax base is a physical unit (or a proxy of it) that has a proven negative impact on biodiversity. Fees are similar to taxes but differ in that they are requited payments – linked to a specific service, benefit, or right received. Fees may be consistent with the PPP or the beneficiary (user) pays approach. Biodiversity-related taxes and fees can promote sustainable natural resource management (e.g. protected areas, hunting and fishing, and water abstraction) and reduce pollution (e.g. pesticide, wastewater and plastic pollution). They contribute to biodiversity financing in two main ways.

- First, by introducing price signals to internalise external environmental costs (i.e. raising the costs of production and consumption), biodiversity-related taxes encourage investment and innovation in more sustainable production and consumption. In shifting the risk-return profile and perceived investability of firms, such taxes ultimately help to align financial flows with biodiversity goals.
- Second, they raise revenue for government budgets. In OECD countries, biodiversity-relevant taxes generate about USD 10 billion per year (OECD, 2024^[2]). While this is a considerable amount, environmental taxes more broadly generate about USD 800 billion per year (OECD, 2026^[3]). Governments can use this revenue for different purposes, including earmarking revenue to finance biodiversity conservation, sustainable use and ecosystem restoration directly.

While taxes can contribute to both behavioural change and revenue generation, the two objectives involve trade-offs. The tax rate that is optimal for behavioural change will not generally maximise revenue over time. As a tax succeeds in reducing harmful activity, its revenue base shrinks. Policy makers should therefore be clear on the tax's primary objective. Where revenue generation is the goal, taxes on goods and services with relatively inelastic demand are more effective. Where behavioural change is the priority, the level and design of the tax should be calibrated accordingly, recognising that an effective environmental tax will progressively reduce its own revenue base, and, in turn, the associated financing needs for biodiversity.

Earmarked revenues can be an important source of biodiversity finance. However, it is important that earmarking is accompanied by clear spending objectives, transparent use of funds and regular evaluation to ensure its efficiency and effectiveness (OECD, 2025^[1]). Moreover, dependence on any single earmarked revenue alone is not always a sustainable financing approach: where the elasticity of supply or demand is high, revenues will fall as the use of the taxed goods or activities falls in response to the tax.

Types of biodiversity-relevant taxes and fees

Various taxes and fees are relevant to biodiversity finance. Examples include those on water pollution, pesticides, protected areas, hunting and fishing licences, plastic bags, tourism and carbon taxes. Several countries have implemented taxes on water pollution (or effluent fees) to address adverse impacts on freshwater and marine ecosystems, including Australia, Canada, Denmark, France, Korea, Lithuania, Mexico, the Netherlands, Poland and Spain. Water pollution taxes can be levied on specified pollutant discharges based on loads and/or concentration levels (e.g. biological oxygen demand, chemical oxygen demand) or on products causing pollution (e.g. pesticides).

In many countries, such instruments co-exist with volume-based wastewater charges and are used to finance water treatment infrastructure and pollution reduction. In France, for example, both water pollution taxes and abstraction charges help fund the six Water Agencies. Similarly, in Croatia revenues from abstraction and pollution charges (the “water protection fee”) fund the River Basin Management Plan measures and related operational costs of Croatian Waters (Sanchez Trancon and Leflaive, 2024^[4]). Similar earmarking arrangements exist in Bulgaria and Colombia.

Pesticide taxes to address diffuse pollution are less common, applied in Denmark, France, Italy, Mexico, Norway and Sweden (Sud, 2020^[5]). Sweden applies a uniform tax per kilogram of active substance to all plant protection products, whereas most other countries apply differentiated pesticide taxes to better reflect variations in environmental and health risks. Denmark (see Box 3.1) and France earmark their pesticide tax revenue. The annual revenue from France's levy was approximately EUR 188 million in 2023 (French Government, 2024^[6]). The revenue is allocated to regional water agencies and the French Office for Biodiversity, and used to improve water quality, with EUR 41 million allocated to the Ecophyto Plan, which aims to reduce pesticide risks and use by 50% by 2030.

Box 3.1. The Danish pesticides tax

Following a value-added tax on pesticides that was introduced in 1996, a pesticide tax was introduced in 1999 and has been subsequently reformed and increased in 2013 and 2022. The pesticide tax as of 1999 was designed as a value-added levy on the sales price of each product, with rates ranging from 33% on fungicides and herbicides to 54% on insecticides. In 2013 the tax rate was differentiated according to the environmental and health impact of each product, based on a newly designed Pesticide Load (PL) indicator. The tax consisted of DKK 107 per PL and a basic tax of DKK 50 per kg active ingredient. An ex-post evaluation study found that the tax lowered the average load of the pesticides used by 16% between 2012 and 2017. A significant share of the revenue is recycled back to farmers via reduced land taxes, with revenue also allocated to support organic farming practices and research.

As part of a broader update under the Danish Pesticide Strategy 2022-26, and to further reduce the pesticide load, revisions to the pesticide tax were introduced again in 2022, increasing the impact-based tax to DKK 140 per PL substance while decreasing the basic tax to DKK 20 per kg of active substance. Annual revenue in 2023 amounted to EUR 72 million, and since 2010, the pesticide load has decreased by more than 50%.

Sources: (Hansen, 2024^[7]), [The Danish Pesticide Tax](#), (Nielsen et al., 2023^[8]), Ex-post evaluation of the Danish pesticide tax: A novel and effective tax design, 10.1016/j.landusepol.2023.106549 (Pedersen, 2024^[9]), [The Danish Pesticide Tax 2013-2024: An example of a green tax with great effect](#).

Entrance fees for protected areas are relatively common, with revenue generated often used to support conservation and restoration efforts within the protected area. A global benchmarking study of national park entrance fees identified 51 countries with protected area entrance fee data and 62 countries with data on international tourist fees (Van Zyl, 2019^[10]). Tourist taxes are increasingly being introduced, with some countries allocating at least some part of the revenue for biodiversity purposes (Box 3.2).

Many studies suggest that transparency in how revenues from protected area entrance fees and tourist taxes are managed, including through earmarking, is key to their success (Brown et al., 2023^[11]). Both residents and tourists tend to respond positively to tourist taxes when the allocation of funds is clearly communicated and directed toward enhancing destination sustainability, mitigating externalities, and supporting the local population (Rosselló-Nadal and Sard, 2026^[12]).

Box 3.2. Examples of protected area and tourist fees, revenue and allocation

Canada: Fees are charged in most national parks and historic sites and cover admission, accommodation, mooring and other types of fees. The revenue generated is used to supplement government budget allocations to help maintain parks, facilities and to protect nature. The total revenue generated was CAD 210 million (USD 150 million) in fiscal year 2024-25, about 50% of which stemmed from admission fees. Biennial Consumer Price Index adjustments are applied to ensure the fees remain current and sustainable.

Costa Rica: Entrance fees to protected areas are differentiated for residents and foreign tourists, and are a major source of income for SINAC, the National System of Conservation Areas (a subsidiary body of the Ministry of Environment). In 2015-19 revenue from entrance fees accounted for 24% of SINAC's income. The fees are relatively low however and have not been adjusted for inflation for several years despite this being required by law.

Japan: Voluntary fees were first introduced in Fuji-Hakone National Park in 2013 and generated JPY 157 million (USD 1.4 million) in 2019, with voluntary fees introduced for Yakushima in 2017 and in some other parks. A mandatory fee of JPY 2 000 (~USD 13.5) was introduced for climbers in Mount Fuji Yoshida Trail in 2024 and doubled to JPY 4 000 (USD 27) in 2025. The revenue is used for the maintenance and conservation of the park.

New Zealand: The New Zealand International Visitor Conservation and Tourism Levy (IVL), introduced in 2019, is charged as part of a visa application or NZ Electronic Travel Authority to most international visitors and finances conservation and tourism projects. The IVL, which raised NZD 150 million (USD 89 million) in 2024/25, is split equally between tourism and conservation. The Ministry of Business, Innovation and Employment must review the amount or method of calculation of the IVL every five years. Following review, the IVL was increased from NZD 35 (USD 21) to NZD 100 (USD 60) per person in October 2024. Revenue generated from the IVL is expected to amount to NZD 190 million (USD 114 million) in 2025/6 and NZD 230 million (USD 138 million) from 2026/7 onwards. Additionally, in 2025 the government announced plans to introduce entry fees in 2027 for international visitors accessing four of its most iconic natural sites – where foreign tourists account for up to 80% of visitors. Entry fees will range between NZD 20-40 (USD 12-24), generating revenue of up to NZD 62 million/year (USD 37 million/year) to be invested in biodiversity conservation and infrastructure maintenance.

Spain: Spain's Balearic Islands (Mallorca, Menorca, Ibiza and Formentera) adopted a Sustainable Tourist Tax in 2016 which ranges between EUR 0.13-4 per night on holiday accommodation, depending on the type of accommodation and the season. The revenue is used for ecosystem restoration, land acquisition, infrastructure improvements and other similar purposes. The tourist tax had reportedly raised approximately EUR 700 million (USD 756 million) between 2016-2023.

Sources: (NZ Department of Conservation, 2024^[13]), Exploring charging for access to some public conservation land: Discussion document November 2024; <https://thisis-japan.com/climbing-mount-fuji-in-2025-new-fees-and-regulations-explained/> <https://www.majorcadailybulletin.com/news/local/2023/06/22/114269/balearic-tourist-tax-almost-700-million-euros-revenue.html> (Parks Canada, 2025^[14]) Fees Report for the Fiscal Year 2024 to 2025; (OECD, 2023^[15]), OECD Environmental Performance Review Costa Rica; (Shoji et al., 2023^[16]) Impacts of user fees for visitors to national parks in the presence of alternative sites.

Plastic bag taxes have proliferated rapidly across OECD and non-OECD countries (OECD, 2025^[11]) with marine and aquatic pollution an often-cited driver of government policy in this area (see e.g. Papp and Oremus (2025^[17])). Ireland for example introduced a levy of EUR 0.15 on plastic shopping bags in 2002, resulting in a sharp decline in the use of plastic bags. Following a small upward trend in consumption in 2006, the levy was increased to EUR 0.22 in 2007. The levy has generated about EUR 260 million over 19 years (2002-2020) (Anastasio and Nix, 2022^[18]) and authors' calculations). The decision to earmark the revenue for environmental purposes was central to increasing consumer acceptance of the levy (Convery, McDonnell and Ferreira, 2007^[19]). Proceeds go to the Circular Economy Fund which, together with levies on landfill and waste recovery, amounted to EUR 27 million in funding in 2025 to support activities for the circular economy transition. Other countries such as Denmark, England and Türkiye have also increased the initial levies to provide stronger price signals and further reduce consumption of plastic bags over time.

Hunting and fishing licence fees serve both revenue and management functions, generating finance for sustainable resource management while directly pricing the use of natural systems. In New Zealand, for example, commercial fisheries and conservation services levies are applied and collected to support the sustainable use of fisheries resources. In 2023/24, revenue from these fisheries and conservation levies totalled NZD 41.3 million (USD 24 million), helping to fund services that support sustainable fisheries management (New Zealand Government, 2024^[20]). Maritime levies and oil pollution levies are also applied, which fund nearly half of Maritime New Zealand's operations in ensuring maritime safety and the protection of the marine environment (Maritime New Zealand, 2025^[21]).

In England, recreational fishing licences generated GBP 22.53 million (USD 30 million) in the 2023-24 financial year with revenue allocated to inter alia protect and improve fish habitats in rivers and in stillwater fisheries (Environment Agency, 2024^[22]). Data on both the revenues generated and its allocation are publicly available on a government website and updated annually. In NSW, Australia, revenue from recreational fishing licence fees amounted to AUD 16.1 million (USD 10.6 million) in 2023-24. By law, all funds collected must be spent on improving recreational fishing in NSW (e.g. the construction of artificial reefs to improve fish habitats) (DPIRD, 2024^[23]). In Finland, revenue from fishing and hunting licence fees is earmarked to finance management of fish population and game (OECD, 2021^[24]). Recreational fishing licence fees generate about EUR 10 million a year, collected from almost 287 000 payers (Metsähallitus, 2023^[25]); the hunting licence fee (called game management fee) for the 2023-24 hunting year was EUR 43, paid by about 300 000 hunters (thus mobilising an estimated EUR 13 million).

Carbon taxes and other revenue-generating approaches for financing biodiversity

Beyond examining additional biodiversity-relevant resources or pollutants upon which taxes or fees could be applied, several governments are beginning to earmark revenue from greenhouse gas (GHG) emission taxes for biodiversity conservation, sustainable use and restoration (Box 3.3).

Box 3.3. Examples of carbon taxes earmarked for biodiversity objectives

Colombia: The 2017 national carbon tax in Colombia, which generated about USD 100 million in 2022, is earmarked for environmental, social and economic objectives. Until 2022, 50% of the proceeds were channelled through the Colombia in Peace fund for the substitution of illicit crops, and 50% through the National Environment Fund (FONAM) to support environmental protection. Since 2023, 80% of revenue is earmarked for environmental purposes, and 20% is earmarked for the substitution of illegal crops. The carbon tax revenue earmarked for environmental purposes goes to a Fund for Life and Biodiversity (*Fondo para la Vida y la Biodiversidad*), established in 2023. The Fund supports actions to reduce deforestation, manage coastal erosion, conserve water resources, strengthen the national PES programme, and address climate change. It is expanding and diversifying its sources of financing through 1) Creation of a portfolio of green financial instruments, including grants, habitat banks, blended finance, debt for nature, thematic bonds, and works for taxes; 2) Design of a virtual international co-operation window, especially for philanthropic resources.

Denmark: The Danish Parliament agreed in November 2024 to introduce a tax on GHG emissions from livestock in 2030, starting at DKK 300 per tCO₂e and rising to DKK 750 per tCO₂e in 2035. Over DKK 40 billion (EUR 5.4 billion) will be allocated to a new Green Landscape Fund (*Den Grønne Arealfond*). The Fund will channel money into reforesting 250 000 hectares of farmland by 2045 (equivalent to the size of Luxembourg) and extracting 140 000 hectares of carbon-rich lowland soils from agricultural production by 2030 to achieve at least 20% protected area coverage. In addition, a CO₂e tax on emissions from carbon-rich peatlands of 40 DKK (EUR 5.36) per ton will be introduced in 2028. The government aims to allocate 9.4 billion DKK (EUR 1.2 billion) for restoring 70 000 hectares of carbon-rich peatlands.

Ireland: Revenues from Ireland's carbon tax (first introduced in 2010) go to the national budget. However, since 2020, additional tax revenue raised by the annual tax increases is ring-fenced and earmarked for specific objectives, one of which is to support green farming. In 2025, EUR 140 million was allocated to the agri-climate rural environmental scheme (ACRES) which aims to support improved outcomes on biodiversity while delivering income support to up to 50 000 farmers. An additional EUR 5 million is allocated to peatland restoration.

Yucatán and Zacatecas, Mexico: Revenues from state-level carbon taxes can be used to finance broader climate and environmental objectives. In Zacatecas, for example, the state law explicitly specifies that revenue will be used for areas with greatest environmental vulnerability and economic need.

Source: (Cardenas Monar, 2024^[26]), Maximising Benefits of Carbon Pricing Through Carbon Revenue Use; (Government of Ireland, 2025^[27]), Budget 2025 - The Use of Carbon Tax Funds; (Government of Denmark, 2024^[28]), About the agreements on a Green Denmark - Ministeriet for Grøn Trepert.

Given that carbon taxes generated USD 33 billion in 2024 (World Bank, 2025^[29]), and the strong interlinkages between climate change and biodiversity loss, other governments may wish to consider earmarking a portion of carbon tax revenues to activities that simultaneously address both climate and biodiversity challenges. Indeed, similar opportunities also exist for revenue generated from auctioned allowances in GHG emission trading schemes, which raised USD 69 billion in 2024 (World Bank, 2025^[29]).

A significantly larger proportion of revenues from ETS schemes are already directed towards climate goals compared to carbon tax revenues (Cayol and Cardenas-Monar, 2025^[30]). In the EU, following an amendment to the EU ETS Directive, as of June 2023 all (i.e. 100%) relevant ETS revenue must be spent on climate and energy-related activities (up from 50% prior to 2023). EU ETS revenue amounted to about EUR 44 billion in 2023 and EUR 39 billion in 2024. In 2023, EUR 33 billion went back to Member States (with the remainder to the Innovation Fund (8%) and the Modernisation Fund (14%)). However, according to (WWF, 2022^[31]) only 0.2% of the total 2013-20 EU ETS revenue was spent on forestry activities. In California, auction proceeds from the cap-and-trade scheme are used to *inter alia* support land conservation, wetland and watershed restoration and sustainable agricultural practices (California Climate Investments, 2024^[32]).

In addition to taxes and fees on activities driving biodiversity loss, governments can raise revenue for biodiversity through lotteries or other revenue-generating instruments. Lotteries have supported biodiversity in countries including France, Germany, the Netherlands, Sweden, the UK and US. France introduced the “Mission Nature” biodiversity lottery in 2023 through a partnership between the French lottery and the French Biodiversity Agency (OFB) whereby EUR 0.43 of EUR 3 for each scratch card go to OFB to fund biodiversity conservation and restoration projects. More than EUR 7 million was mobilised in 2024. In the Netherlands, the Dutch Postcode Lottery is required to allocate at least 40% of proceeds to charitable causes, such as nature conservation, contributing EUR 364 million to charities in 2024 and EUR 8.4 billion since 1990. In the U.S., the Colorado Lottery raised over USD 900 million in sales in 2024. Proceeds are legally dedicated to the ‘great outdoors’, with 50% allocated to Great Outdoors Colorado (GOCO), 40% to the Conservation Trust Fund (CTF), and 10% to Colorado Parks and Wildlife (CPW).

Taking a different approach, the Open Spaces Conservation Fund in Israel aims at rehabilitating, restoring and conserving open spaces, including aquatic habitats; collecting and processing spatial planning data; and supporting monitoring and research. Established in 2012, the Fund is managed by the Israel Land Authority (ILA) and is capitalised mainly by a legal requirement specifying that 1% of the revenue of the ILA is allocated to the Fund each year. The ILA itself is funded through multiple streams, including selling or leasing public land, national budget and other sources. Between 2012-19, the Fund distributed about USD 180 million to more than 500 projects nationwide (OECD, 2023^[33]).

Good practices for mobilising finance for biodiversity through taxes and fees

Good practices for mobilising finance for biodiversity through taxes and fees include (see also (OECD, 2025^[1])):

- **Introduce new biodiversity-related fees or taxes and review existing ones:** Consider opportunities to introduce new fees or taxes where these do not exist, drawing on examples from other countries; regularly review and adjust existing taxes and fees for inflation, periodically evaluate their effectiveness in achieving their intended environmental objectives and consider whether rate increases may be appropriate.
- **Garner support from stakeholders prior to introducing or revising taxes and fees:** Public consultations and structured dialogue with industries, communities, and government bodies to build support and refine policies help ensure fiscal measures are technically feasible, socially acceptable, and environmentally effective. Clear communication and inclusive processes strengthen buy-in, compliance, and help foster equity.
- **Gradually implement and ratchet up schemes:** Phased approaches can provide flexibility, learning and ease transitions. However, political or institutional constraints could make future adjustments difficult, underscoring the importance of a strong initial design.
- **Earmark revenues:** Allocating revenues from biodiversity-related and broader environmental taxes and fees to conservation can build public trust and deliver tangible benefits for nature. When used judiciously, earmarking reinforces the link between payments and positive impact.

- **Continuously monitor, report, enforce and evaluate:** Ongoing data collection and feedback, including via independent audits, allow for continual improvement and responsiveness to change, ensuring that the taxes and fees remain effective.
- **Make data and information publicly available to ensure continued public support:** Transparency fosters accountability, increases public trust and can reduce resistance to changes in taxes and fees.

3.1.2. Payments for ecosystem services and subsidies

Payments for ecosystem services (PES) and biodiversity-motivated subsidies are instruments that reward biodiversity-positive behaviour. Actions of private actors can produce biodiversity and ecosystem service benefits that extend to others, creating positive environmental externalities. In this context, PES and biodiversity-motivated subsidies are based on the beneficiary (or user) pays approach.

Payments for ecosystem services

PES refer to voluntary transactions between ecosystem service users and service providers that are conditional on agreed rules of natural resource management for generating offsite services (Wunder, 2015^[34]). Ecosystem service users may be individuals (households), communities, or public and private companies that benefit from ecosystem services. The payments compensate individuals, such as farmers, foresters or fishermen, for the additional costs of improved ecosystem service provision, over and above that which is required by any existing regulation. PES have been designed to address a variety of ecosystem services, including water purification, flood regulation, habitat provisioning and carbon sequestration, and applied across a range of ecosystems including forests, wetlands, agri-environment ecosystems, and more recently marine ecosystems.

The underlying premise of PES is that downstream beneficiaries of ecosystem services are willing to pay upstream providers to change their land (or sea) management practices in ways that deliver the specified ecosystem services. In practice, due to the often numerous and diffuse nature of ecosystem service beneficiaries, and to help reduce transaction costs, governments often act on behalf of ecosystem service beneficiaries to ensure payments (OECD, 2025^[11]). Moreover, for a PES to emerge, the expected ecosystem value (or beneficiaries willing-to-pay) must exceed expected costs of providing ecosystem services (or provider's willingness-to-accept). PES is unlikely to be feasible if the opportunity costs outweigh the expected environmental benefits (Wunder et al., 2020^[35]). Identifying sufficient, long-term, and reliable sources of finance is important to ensure that the financial resources necessary to carry out the desired environmental objectives can be met in practice.

PES schemes are active in at least 28 countries (OECD, 2024^[2]), with most located in non-OECD countries (OECD, 2024^[2]; Wunder et al., 2018^[36]). More than half of a sample of 55 PES schemes were publicly funded and these tended to be larger in area (Ezzine-de-Blas et al., 2016^[37]). Overall, securing financing for PES has been set up in various ways covering public, private and mixed source approaches (Box 3.4).

Box 3.4. Financing modalities of several large PES programmes

U.S. Conservation Reserve Programme (CRP): Established in 1985 via the Farm Bill, the CRP's main objectives are to minimise soil erosion, enhance water quality, and create wildlife habitat. A publicly funded programme, it pays farmers and landowners to remove environmentally sensitive cropland from production and establish conservation cover. A total of USD 1.8 billion was paid to farmers in FY 2023 for practices on 22.9 million acres (9.5 million ha).

Costa Rica Payments for Environmental Services: Forestry Law No. 7575 (1996) established the legal basis for the national PES scheme, recognising land uses compatible with four ecosystem services – mitigation of greenhouse gas emissions, protection of biodiversity for conservation and sustainable use, protection of water for urban, rural, or hydroelectric use, and natural scenic beauty. The law also created the National Fund for Forest Finance (FONAFIFO) to manage the PES scheme. Finance for the PES programme stems from earmarked revenue from a fossil fuels tax (3.5% earmarked), which accounts for 92% of funding, alongside a water utilisation levy (25% earmarked; 6% of funding), and from other sources (2%) including carbon credit sales. The annual budget for the PES programme is USD 20-25 million.

Mexico Payments for Hydrological Services (PSAH): Several PES schemes have been implemented as of 2003 and have evolved over time. The national Payments for Hydrological Services (PSAH), managed by the National Forestry Commission (CONAFOR), pays forest owners for the benefits of watershed protection and aquifer recharge. Funding for the programme stems from fees charged to water users, annual budget allocations, as well as contributions from local governments and the private sector.

Colombia: Several PES programmes have been implemented since 2002, with a national PES law (Law No. 870, 2017) and national PES policy document issued in 2017. There are more than 15 PES programmes, most launched prior to the national law. Eight of the 15 PES programmes are funded through private-public partnerships, four are publicly funded, and three are funded through donations from private firms or corporate social responsibility initiatives.

Note: Examples were selected to illustrate the financing modalities of various PES schemes, rather than to represent best practice or proven effectiveness.

Sources: (U.S. GAO, 2024^[38]), Conservation Reserve Program; (Viguera et al., 2024^[39]), Alternatives for improving Payment for Ecosystem Services (PES) effectiveness on water resources; (Sanchez Monge, 2024^[40]), The Costa Rican Payments for Ecosystem Services Program (Hernández-Blanco, Costanza and Moritsch, 2025^[41]) (Selibas, 2023^[42]) (Izquierdo-Tort et al., 2025^[43]). Payments for ecosystem services in Mexico: Two decades of progress and challenges between research and practice; (Moros et al., 2020^[44]) Pragmatic conservation: Discourses of payments for ecosystem services in Colombia; (Rodríguez-de-Francisco, Duarte-Abadía and Boelens, 2019^[45]). Payment for Ecosystem Services and the Water-Energy-Food Nexus: Securing Resource Flows for the Affluent?

Examples of PES schemes in Europe are generally less prevalent (though results-based or hybrid agri-environmental schemes, which are akin to PES, are proliferating – see discussion below). Two examples from Finland and France are elaborated below. Other examples of PES-like, performance-based conservation payments include the carnivore conservation payments system in northern Sweden which has been running since 1996 (Kaiser et al., 2025^[46]).

- Finland's Forest Biodiversity Programme METSO, established in 2008, pays forest landowners to protect their forests either permanently or under fixed-term agreements of 10 years. Annual funding varies but is typically about EUR 30 million a year. The programme focuses on Southern Finland because the share of protected forests is much smaller (3%), and the share of threatened forest habitats is much higher (79%) than in the north (Kangas and Ollikainen, 2025^[47]). Habitat-specific criteria are used to select and prioritise the sites (Batpurev et al., 2025^[48]). Goals for the 2008-2025 target included protecting 96 000 hectares of native forests and protecting and restoring 82 000 hectares of valuable forest habitats in commercially managed privately owned forests by fixed-term environmental forestry subsidy agreements or in nature management projects. A programme evaluation found that permanent protection targets were met but targets for the environmental forestry subsidy agreements and nature management projects were not. Recommendations included moving from cost-based compensation to results-based payments and securing long-term and predictable sources of funding for the proposed next period (Finnish Government, 2025^[49]). The Government has since issued a resolution to continue the METSO until 2040, with the aim of expanding the network of protected areas by 50 000 hectares and to promote nature management measures in commercial forests on 30 000 hectares by 2030. The programme supports the implementation of the EU Nature Restoration Regulation and the national restoration plan for the years 2030 and 2040 (Government of Finland, 2026^[50]).
- France introduced PES pilot schemes for farmers to contribute to the agroecological transition as part of its 2018 Biodiversity Action Plan and the 2023 Water Plan. The PES schemes target water quality, biodiversity protection, soil health and climate change mitigation (via carbon storage in soils or biomass). With an initial budget of EUR 170 million (2021-24), farmers are paid based on annual outcomes across their entire farms (MCETC, 2024^[51]). For payment to be approved, the project and its indicators must be validated by the Water Agency. The number of indicators used varies but frequently relates to reducing herbicide use and nitrogen management, grasslands and soil cover. By the end of 2025, more than 3 600 farmers were engaged within 138 regional PES projects, mainly in catchment areas, representing 1% of the utilised agricultural area (UAA). The PES scheme was extended from 1 January 2025 until the end of 2027 in the form of a notification-exempt scheme, with a budget ceiling of EUR 400 million to cover the financing of Water Agencies and local authorities, which have since become granting authorities on the same footing as Water Agencies and can potentially finance PES on their own.

While most PES focus on terrestrial ecosystems, initiatives to mobilise finance and establish coastal and marine-related PES are also emerging. Costa Rica, for example, launched a marine PES pilot in 2024 in the Gulf of Nicoya, with a focus on mangrove ecosystems. At least part of the finance for this marine PES pilot stems from GBP 1 million that Costa Rica was awarded from the Earthshot Prize in 2021. The marine pilot PES is also receiving support from the World Bank and AFD (World Bank, 2025^[52]).

The potential for scaling corporate-financed payments is likely to be highest where a company's operations depend on ecosystem service inputs over which other private land users have control (Thompson, 2021^[53]), and which are at risk (Bösch, Elsasser and Wunder, 2019^[54]). Many of the privately financed PES schemes have focused on changing upstream land-use practices to improve water quality and quantity downstream, with payments made by beverage companies, breweries, hydropower companies and water utilities (Ezzine-de-Blas et al., 2016^[37]). Scaling private finance may be constrained however by a limited willingness-to-pay and capacity to organise, as companies and other ecosystem service users may tend to free-ride and wait for government intervention. In this context, government-led PES may offer advantages in their ability to organise collective payments at scale (Wunder et al., 2020^[35]). Indeed, many of the larger PES programmes globally tend to be either publicly financed from government budget or have combined earmarked revenue from taxes and fees together with other funding sources.

Government policy instruments for PES, such as standards, guidance and registers, help to improve transparency and environmental integrity in these programmes, and thereby increase trust, certainty and

confidence in the programme (OECD, 2025^[1]). Under any government-led PES, once such schemes have demonstrated their ability to achieve positive biodiversity outcomes, one could also envision the possibility of enabling voluntary private sector contributions to PES schemes (see section 3.1.5. on biodiversity credits).

Subsidies for biodiversity

A subsidy is a result of a government action that confers an advantage on consumers or producers, to supplement their income or lower their costs (OECD, 2005^[55]). They can take different forms, such as direct payments (e.g. grants or loans) – including PES when these are government financed – guarantees, favourable tax treatments (e.g. reduced tax rates) and market price support. Recipients of government subsidies can be private (e.g. households, landholders and private companies) or public actors (e.g. local governments and state-owned companies) (OECD, 2025^[1]). Subsidies can have beneficial, harmful or negligible impacts on biodiversity. The economic rationale for biodiversity-positive subsidies is to internalise the positive externalities associated with the provision of biodiversity and associated ecosystem services that are not priced in economic decision-making.

Subsidies intended to support biodiversity are applied across a range of sectors but mainly in the agriculture, forestry and fishing sectors. Most biodiversity-positive subsidies are provided in the form of grants, followed by tax reductions (OECD, 2025^[1]). Income tax reductions for landholders to establish nature reserves or national parks in South Africa, for example, have helped to add 500 000 ha to the national protected area network. Total tax reductions secured in taxpayers' returns for 2020-21 tax years were approximately R 189 million (USD 10.6 million) (OECD, 2025^[1]).

Currently, most OECD countries implement agri-environmental schemes which often constitute the largest source of funding for practical nature conservation (Herzon et al., 2018^[56]). In the UK, between 2023 and 2024, there has been an overall increase in agri-environmental scheme payments of GBP 378 million (+51%) and a decrease in basic payment scheme and delinked payments (i.e., not linked to land area) of GBP 316.3 million (-17%). This is also an example of how government support to agriculture can be reformed to move away from payments that are considered potentially environmentally harmful (see e.g. Lankoski, Nales and Valin (2025^[57]) and Box 3.5).

Box 3.5. Identifying and reforming subsidies harmful to biodiversity

Government support policies, including subsidies, play a critical role in shaping economic, environmental and social objectives. The form of support varies widely across sectors, from agriculture and fisheries to industry and energy. While some forms of government support are directly intended to benefit the environment, others can have unintended adverse environmental impacts, depending on how they are designed and implemented. For example, when designed effectively, government support to fisheries can help maintain healthy fish stocks, boost productivity, and build resilience in the sector. However, poorly designed or badly targeted subsidies risk encouraging overfishing and illegal fishing, thus damaging ecosystems. The OECD Review of Fisheries 2025 finds that across 41 countries and territories (30 OECD Members and 11 non-Members, which together account for most global fish production),¹ government support to fisheries reached USD 10.7 billion in 2020-22. Of this, almost two-thirds (65%) presented a risk (moderate or high) of encouraging overfishing and illegal fishing in the absence of effective management (in OECD Members it was 42%; in non-Members it was 90%). Similar levels of environmental risks have been identified in the case of agricultural payments, for which elements of support design (category of instrument, type of production, environmental conditions) and of context (e.g. farm structure and background regulation) play a critical role.

Several OECD countries have undertaken national-level studies to identify and assess incentives, including subsidies, that are harmful to biodiversity and/or the environment. Additional countries, such as the UK, have since undertaken similar assessments. More recently, UNDP BIOFIN is supporting several developing countries to identify and assess subsidies harmful to biodiversity at either sectoral or national level.

Source: (OECD, 2025^[58]), OECD Review of Fisheries, 2025; (Lankoski, Nales and Valin, 2025^[57]) Assessing the impacts of agricultural support policies on the environment: Economic analysis, literature findings and synthesis; (OECD, 2022^[59]), Identifying and assessing incentives, including subsidies, harmful to biodiversity: A review of national-level assessments and insights for good practice; (JNCC, 2025^[60]), Value of subsidies and other incentives harmful to biodiversity; (UNDP, 2024^[61]), The Nature Of Subsidies.

Earlier analysis found that many agri-environmental schemes lack proper targeting mechanisms (Guerrero, 2021^[62]), and have resulted in mixed ecological outcomes (Batáry et al., 2015^[63]). This has spurred greater interest in result-based payments as well as hybrid-based payments (i.e. combining action-based and results-based payments) over action-based payments, to improve both environmental- and cost-effectiveness of these schemes. These types of programmes are more closely aligned with good practice PES and include features such as differentiated payments and spatial targeting. A review of these issues in the context of agri-environmental payments is provided in (OECD, 2022^[64]).

A recent study identifies 39 results-based payment schemes for biodiversity conservation in agricultural landscapes in Europe (Hagemann et al., 2024^[65]). Most schemes are in Germany (15), followed by Ireland (11), UK (5), Switzerland (4), Austria (3) and Spain (1). Twenty-three of the schemes are purely results-based and 16 hybrid-based payment schemes (the latter particularly common in Ireland). While most schemes are government financed, two are privately financed through carbon certificates (both in Austria), one is financed by the Foundation for Nature Conservation Schleswig-Holstein, and another by a public water utilities company compensating farmers to reduce nitrate levels (both in Germany). Overall, hybrid schemes were particularly well-received by farmers as they serve to reduce financial risks associated with purely results-based schemes. More recently in 2026, Finland introduced a public results-based pilot scheme to support farmers to reduce high phosphorous levels in fields within the Archipelago Sea catchment area. Soil samples will be taken before and after the measures to monitor outcomes achieved.²

Conservation easements and covenants are mechanisms that secure long-term protection or sustainable management of land while maintaining private or concessionary use rights. They typically involve governments, NGOs or private entities acquiring or leasing land-use rights, or placing legally binding restrictions on land use, in exchange for payments or incentives (Box 3.6).

Box 3.6. Conservation easements

Conservation easements and covenants play an important role in biodiversity finance by securing durable conservation outcomes over long time horizons, often at lower cost than outright land acquisition. They can also provide the legal and institutional basis for generating revenue streams, including through biodiversity credits, carbon markets or public payments.

Different forms are used depending on legal and institutional contexts. In countries such as the United States, conservation easements are widely used on private land, often supported through publicly funded programmes such as the Conservation Reserve Program (CRP), which compensates landowners for maintaining ecosystem services. In Australia, conservation covenants are frequently used to secure biodiversity offsets over the long term, ensuring that compensatory measures are maintained in perpetuity. Similar instruments are also used in Canada and other countries to support habitat protection and stewardship on private land.

Source: (OECD, 2025^[1]), Scaling Up Biodiversity-Positive Incentives: Delivering on Target 18 of the Global Biodiversity Framework.

Overall, government spending on climate change mitigation and adaptation is substantially larger than on biodiversity. Given the strong interlinkages between biodiversity loss and climate change, there are likely to be significant opportunities to scale up spending that targets both (see also section 3.1.4 on nature-based carbon credits and discussion on synergies and trade-offs). Some countries are establishing funds to directly target interventions supporting both biodiversity and climate change mitigation and adaptation:

- England's Nature for Climate Fund was established in 2020 to support Defra's targets of at least 7 500 ha of annual tree planting and 35 000 ha of peatland restoration from 2020-21 to 2024-25. The Nature for Climate Fund had a total budget of GBP 764 million up to March 2025.
- Canada established a Nature Smart Climate Solutions Fund in 2021, a CAD 5 billion, 10-year fund to address climate change and biodiversity loss. It is composed of three programmes – the 2 Billion Trees programme (CAD 3.19 billion), the Nature Smart Climate Solutions Fund (CAD 1.4 billion) and the Agricultural Climate Solutions Fund (CAD 885 million).
- Germany adopted a Federal Action Plan on Nature-based Solutions for Climate and Biodiversity in 2023, allocating EUR 4 billion through 2026 to a range of measures such as rewetting peatlands, restoring water bodies and floodplains and protecting seas, forests and soils.

Given the large size of public finance invested across these different initiatives, it would be particularly important to ensure that adequate strategies, safeguards, monitoring and evaluation are in place to ensure that biodiversity benefits are realised. In the case of Nature for Climate Fund in England, for example, the National Audit Office undertook an evaluation in 2022, finding that delays in its monitoring and evaluation framework would make it difficult to assess early-stage performance against wider environmental benefits including biodiversity. Since the start of the Canadian 2 Billion Trees programme in 2021, over 300 species at more than 8 200 sites have been planted. 93% of the projects planted more than 2 types of trees. More than two-thirds of the projects planted 6 or more trees. The scheme is supported by targeted research with the aim to ensure the programme is grounded in the latest science. However, following a Federal Fall Budget 2025 announcement, the Government of Canada is now winding down the programme (Government of Canada, 2026^[66]).

Good practices for mobilising finance from subsidies and PES for biodiversity

Good practices for mobilising and securing long-term financing and scaling up PES and biodiversity-positive subsidies include (see also (OECD, 2025^[11])):

- **Identify and reform environmentally harmful subsidies:** Countries should accelerate efforts to identify their environmentally harmful subsidies and prioritise reform of those causing the greatest ecological damage and market distortion, while considering ways to redirect expenditure towards activities that benefit biodiversity.
- **Clearly identify the providers and beneficiaries of ecosystem services:** PES operates where there are strong dependencies on ecosystem services. Mapping ecosystem services, their geographic scope and relevant tenure arrangements, and providers and beneficiaries, can help determine potential demand for the service in question.
- **Ensure strong stakeholder engagement:** Payment schemes should involve stakeholders early in the design process and provide technical and administrative support. Meaningful participation can strengthen scheme design, improve legitimacy and remove barriers to participation.
- **Clearly define objectives and adopt outcome and, where possible, impact metrics:** Clear objectives help to guide the design of the scheme, enhance transparency and avoid ad-hoc political influence, while robust metrics enable assessment of progress over time.
- **Spatially target and differentiate payments:** Payments are most cost-effective when targeted according to ecosystem service provision and threats. Further cost-effectiveness gains can be achieved by differentiating payments where compliance costs vary considerably, balancing cost-effectiveness with equity, transparency and administrative simplicity.
- **Consider pros and cons of bundling and stacking ecosystem services:** Bundling and stacking can harness synergies and increase incentives to participate. However, these approaches require clear accounting frameworks and safeguards to manage risks related to double counting or lack of additionality.
- **Enforce conditionality:** Payments should remain conditional on the fulfilment of agreed obligations of ecosystem service providers. This demands continuous monitoring, reporting and verification systems.

3.1.3. Biodiversity offsets

Biodiversity offsets are actions to compensate for significant residual unavoidable harm to biodiversity from development activities, after appropriate steps have been taken to first avoid and minimise impacts (BBOP, 2012^[67]). They are the last step of the mitigation hierarchy. The objective of biodiversity offsets is to achieve no net loss (NNL) of biodiversity – or preferably, a net gain (NG) i.e. net positive impact (BBOP, 2012^[67]).

Based on the Polluter Pays Principle, the overarching NNL objective underpinning biodiversity offsets is effectively an absolute cap on net biodiversity loss. This quantitative restriction implies that a firm must invest in ways to avoid, minimise, restore (on-site) and offset biodiversity damages from a development project – i.e. that would otherwise not have been required in the absence of NNL obligations. In cases where a biodiversity offset programme has a net gain objective, the goal is even more ambitious.

Biodiversity offsets are considered a subset of biodiversity compensation approaches (with the latter referring to a broader set of actions, including financial compensation for affected individuals). To qualify as an offset “there must be demonstrably quantifiable equivalence between what is lost and gained [...]”. An offset can therefore be seen as a specific and rigorously quantified type of compensation measure” (Bull et al., 2016^[68]).

Three mechanisms exist for implementing biodiversity offsets (OECD, 2016^[69]):

- One-off or permittee-responsible offsets: Offsets undertaken by the developer (i.e. permittee), sometimes in collaboration with a third-party provider. The developer is responsible and liable for the outcomes of the biodiversity offset. In some cases, the location and approach for the offset is decided by the government.
- Mitigation banking: Sometimes referred to as habitat banking, species banking, conservation banking or biodiversity banking. Involves a repository of offset units managed by a public or private third party. Each unit represents a quantified gain in biodiversity resulting from actions to restore, enhance or protect biodiversity. The offset liability is transferred from the developer to the third-party.
- Payments-in-lieu: A payment-in-lieu is a mechanism by which regulatory agencies levy fees on developers for their adverse impacts on biodiversity. The collected fees are spent by a government agency, non-governmental organisation or another third-party on compensatory biodiversity measures. The payment level typically reflects a cost estimate of the financial resources necessary to compensate for a development's residual biodiversity impact. This compensatory approach often does not align with a strict definition of offset where losses and gains are based on rigorous measurement of equivalency. As with mitigation banking, the offset liability is transferred from the developer to the third-party.

Each mechanism comes with advantages and disadvantages. For example, mitigation banking and payments-in-lieu offer the ability to pool resources and pursue offsets in strategic areas of environmental priority. Experience with payments-in-lieu programmes has indicated they have performed poorly in term of time lags, with several offset funds not spent years after payments were made. Mitigation banking, whereby offset improvements can be developed in advance of losses at development sites, helps to address the potential for temporal losses and uncertainty (OECD, 2025^[11]).

Biodiversity offsets first emerged in the 1970s as part of the U.S. Compensatory Mitigation programme and the German environmental compensation legislation (OECD, 2016^[69]). The three main drivers of biodiversity offsets today are regulatory requirements, lender requirements (e.g. IFC Performance Standard 6 and the Equator Principles) and voluntary corporate policies (OECD, 2025^[11]). While all three can help increase application of the mitigation hierarchy, the vast majority (99.7%) of biodiversity offset projects arise through regulatory requirements (Bull and Strange, 2018^[70]), and are the focus of discussion here.³ At least 42 countries require biodiversity offsets in some contexts (e.g. in specific sectors or habitats, or for certain types of impacts) (GIBOP, 2019^[71]). While some only allow one type of mechanism to implement biodiversity offsets, many allow two or all three mechanisms to be used. Brazil, China and Luxembourg (Box 3.7), for example, apply the payments-in-lieu approach, whereas the U.S. allows all three, with regulations prioritising mitigation banks, followed by payments-in-lieu and then one-off offsets. Mitigation banks exist in Australia, Canada, Colombia, England, Germany, France and the United States.

Biodiversity offset activities can be categorised as restoration or averted loss measures (e.g. protection of threatened habitats or species), with various schemes allowing one, the other or both. Generally, ecological restoration measures will have lower additionality risks than avoided loss measures as they require significant capital outlays, have a more easily defined baseline and are directly observable (zu Ermgassen et al., 2026^[72]). Moreover, restoration measures imply that NNL is achieved relative to an absolute level. In contrast, averted loss measures frequently only require that individual projects achieve NNL relative to a declining counterfactual (Simmonds et al., 2019^[73]). Offset policies in South Africa, England and Australia's Northern Territory require absolute net outcomes relative to a fixed baseline, thus ensuring absolute outcomes across impact and offset sites, with the latter two requiring absolute net gain (Maron et al., 2025^[74]).

Box 3.7. Luxembourg Eco-points System

In Luxembourg's eco-points system, introduced in 2018, developers of public or private buildings or facilities must pay an amount equal to the difference between the total eco-points of the site before and after development (paid per m²). Rarer or more difficult-to-replace habitats receive a higher score, and each eco-point is equivalent to one Euro. Payments are made either to a national compensation pool, administered by the Nature and Forestry Administration, or to regional compensation pools, managed by municipalities. A government review of the eco-points and compensation system conducted in 2025 found that the system was working well overall, albeit with some regional disparities. A registry tracks the eco-points; however, it is not publicly accessible.

Source: (European Union, 2021^[75]), Ensuring that Polluters Pay - Luxembourg; (Government of Luxembourg, 2025^[76]), National review of eco-points and compensation system; (Kujala et al., 2022^[77]), Credible biodiversity offsetting needs public national registers to confirm no net loss.

Biodiversity offsets can be mandatory or voluntary, with varying degrees of government oversight. Finland, for example, introduced a regulated voluntary ecological offset programme through its Nature Conservation Act 2023. The provisions in the Act are complemented by a Decree of the Ministry of Environment on Voluntary Ecological Compensation (933/2023). The Nature Conservation Act 2023 aims to ensure credibility, correspondence, verification and transparency, while the Decree includes more detailed rules on evaluation and metrics. An *ex-ante* stress test finds the Finnish system to be of high quality overall (Zu Ermgassen, 2026^[78]). Areas for further development include matching supply and demand, long-term monitoring, and capacity (OECD, 2025^[1]; Zu Ermgassen, 2026^[78]). These are being addressed via regulations and guidance for firms to develop market platforms and establish intermediaries to match supply and demand, developing tools and calculators, building capacity and creating tax incentives to facilitate development of biodiversity offsets (OECD, 2025^[1]).

Finance mobilised via biodiversity offset programmes and potential scalability

While comprehensive data on the volume of mandatory biodiversity offset markets is limited, national examples illustrate the magnitude of financial flows stemming from the private sector within such schemes.

- The Australian New South Wales (NSW) Biodiversity Offset Scheme: Applications for development or clearing approvals must set out how impacts on biodiversity will be avoided and minimised. The residual impacts can be offset by the purchase and/or retirement of biodiversity credits or via payment into the Biodiversity Conservation Trust Fund. In addition to proponents required to offset impacts, biodiversity credits can also be purchased voluntarily by government bodies or philanthropic organisations. In 2024, 101 894 credits were traded, amounting to approximately AUD 284 million (USD 196 million) in value (CORE Markets, 2025^[79]).
- The Australian Queensland Environmental Offset Policy: Developers may deliver required offsets themselves (referred to as a 'proponent-driven offset'), through an agency-led mechanism where developers make a financial payment to the State Government, who then administers the offset (referred to as a 'financial settlement offset'), or through a combination of these (Queensland Government, 2025^[80]) (Rhodes et al., 2023^[81]). Financial settlement offsets are the most common approach, with the payment calculated via a Financial Settlement Calculator. Over three financial years (2020-23) the Department of Environment and Science received a total of AUD 22 million (USD 15.6 million) in financial settlement offsets (Queensland Parliament, 2023^[82]).
- Colombia biodiversity offsets and habitat banking: Principles and rules to govern biodiversity offsets were first introduced in Colombia in 2012, with habitat banking formally introduced in 2016.

As of August 2023, 18 habitat banks were registered with the Ministry of Environment and Sustainable Development. While the financing potential for 2023 was estimated at around COP 2.3 trillion (USD 550 million), information available on the actual scale of the market through habitat banking (which is limited) suggests that transactions to date total fewer than 20, with less than 10 total buyers. Collectively the transactions were estimated to range from USD 5 to 10 million in total value in 2024 (Green Finance Institute, 2024^[83]).

- The UK Biodiversity Net Gain (BNG) Policy: Under the UK Environment Act 2021, new housing, industrial and commercial developments in England are required to achieve a BNG of 10%. Developers can achieve BNG through onsite activities, offsite activities, the purchase of biodiversity units or a combination. Where developers cannot fulfil their obligations through onsite activities and the offsite biodiversity units sold in the private market, they must purchase statutory biodiversity credits. The statutory credit prices range from GBP 42 000–650 000 (USD 55 500–860 000) per credit depending on tier/habitat, with an estimated weighted average price of around GBP 46 500 (USD 61 400) (UK Government, 2026^[84]). Offsite biodiversity units sold in the private market are generally less expensive with variable prices as they are governed by demand and supply (RICS, 2026^[85]). The potential private off-site market is expected to be worth between GBP 135–274 million (USD 178–361 million) annually (Natural England, 2023^[86]).
- The US Wetland Compensatory Mitigation Scheme: established under the Clean Water Act (1972), requires compensation for wetland losses to achieve no net loss (NNL) of wetland functions. Federal guidance in 1995 enabled the growth of mitigation banking, though early policy favoured permittee-led compensation, often with weaker oversight and poorer outcomes. The 2008 Final Compensatory Mitigation Rule introduced uniform standards and prioritised mitigation banking, increasing its share of compensatory mitigation from 30% in 2010 to 60% in 2017. The resulting wetland and stream mitigation banking market generates an estimated USD 3.5 billion annually (2019) and has attracted substantial private investment from angel investors, private equity, and institutional investors. The sector has also delivered strong financial performance, with most investments meeting or exceeding expected returns.

Global experience with mandatory biodiversity offset policies and projects reveals significant potential to scale up their use, and to improve their effectiveness (OECD, 2025^[1]). For example, although policies mandating biodiversity offsets exist in 42 countries, their coverage is often limited and their implementation inconsistent. Offsets are applicable to a wide range of sectors (e.g. housing developments, infrastructure, mining, energy and agriculture) and can be used to compensate for impacts on a variety of terrestrial, freshwater and marine ecosystems (e.g. wetlands in the United States and Canada; fish habitat in Canada and Queensland, Australia; native vegetation in Victoria, Australia; and forests in Brazil, India and Mexico). In other cases, they apply more broadly to biodiversity (such as in England and Germany). As such, biodiversity offset schemes have the potential to be more comprehensively applied. In England, for example, plans include the expansion of the BNG to cover Nationally Significant Infrastructure Projects (NSIPS) and to develop Marine Net Gain to improve ocean health while supporting economic growth (Natural England, 2025^[87]).

Given the urgency to mobilise finance for biodiversity, greater transparency on the finance flows generated by biodiversity offset schemes can also help to make the case for their use. It is important to bear in mind however that while the finance generated by biodiversity offset schemes may be of general interest, the key issue is to determine whether the biodiversity offset scheme achieved its intended objective of NNL or NG. Greater use of and improvement in publicly available biodiversity offset registries are a key step to do this.

However, a study conducted in 2022 identified only 9 public governmental offset registries which in most cases were not sufficiently comprehensive to enable an assessment of whether intended NNL or NG objectives had been achieved (Kujala et al., 2022^[77]). Furthermore, registries are not always centralised

and accessible. In the US Wetland Mitigation scheme, for example, while RIBITS tracks payment-in-lieu and mitigation banks, information on one-off offsets is not recorded (Madsen, 2024^[88]). In England, information on the off-site offset market is available on a government website, while most biodiversity gains are delivered on-site and are recorded on more than 200 local authority planning websites (zu Ermgassen et al., 2026^[72]). There is a need for standardised, centralised, public registries with information about biodiversity losses and gains, including ex ante assessment and approval of offset proposals and ex-post data on offset implementation and outcomes (Kujala et al., 2022^[77]).

Good practices for mobilising finance with biodiversity offsets

Good practices for biodiversity offset schemes include (IUCN, 2016^[89]; OECD, 2025^[1]; zu Ermgassen et al., 2026^[72]):

- **Clearly define limits to what can be offset:** In areas where biodiversity is unique, irreplaceable or of high value, bans or restrictions on development may be more appropriate than permitting development to proceed, even where offsets are proposed.
- **Strictly adhere to the mitigation hierarchy:** Strong efforts to avoid and minimise impacts at the outset are critical, including by strengthening environmental assessment, permitting processes and spatial planning.
- **Strategically plan biodiversity offsets:** A strategically planned, landscape-level approach to offsetting – as opposed to an *ad hoc* approach – can better achieve biodiversity objectives and enhance cost-effectiveness.
- **Clearly define offset objectives and reference levels:** Objectives (e.g. NNL or NG) and reference levels are fundamental to ensure measurable outcomes and additionality, prioritising absolute no net loss or net gains rather than relative improvements.
- **Apply 'like-for-like' or 'like-for-better' principles to biodiversity offsets:** The negative impacts of a development project and the positive impacts of a biodiversity offset should be equivalent, and assessed using metrics that are both scientifically rigorous and practically applicable.
- **Address potential temporal loss and uncertainty:** Tools such as risk-adjusted multipliers and securing long-term biodiversity offset gains through strong governance and sustainable financing can help ensure offset gains are permanent.
- **Implement robust monitoring, reporting, evaluation and enforcement systems** to ensure compliance, track progress and inform adaptive management.

3.1.4. Nature-based carbon credits

Nature-based carbon credits are carbon credits generated by projects that involve conserving, restoring or managing ecosystems to either reduce or remove GHG emissions. They can include project types such as afforestation and reforestation, avoided deforestation, improved forest management, soil carbon sequestration in agriculture and wetland restoration. Blue carbon credits are a subset of nature-based carbon credits that focus on ocean and marine ecosystems, such as mangroves, seagrasses and salt marshes.

Nature-based carbon credits have often been promoted for their potential to achieve greenhouse gas emission reductions while achieving biodiversity co-benefits (Lovelock and Duarte, 2025^[90]). While a carbon credit-generating project is not required to enhance biodiversity, well-designed and implemented projects in land use sectors can benefit biodiversity by, for example, limiting habitat loss (e.g. through REDD+), restoring degraded ecosystems or enhancing habitat connectivity. However, practices such as monoculture plantations, the displacement of native species, conversion of ecologically important

ecosystems (e.g. grasslands, wetlands for forest plantations), or the disruption of existing ecological processes risk reducing biodiversity (Seddon et al., 2019^[91]) (Zhou and Almond, 2025^[92]).

As nature-based carbon credits are gaining market share in voluntary carbon markets (VCM), thus generating private investment in such activities, it is important to examine how nature-based carbon credits have been established in practice, and the potential they have as a revenue stream for biodiversity. In terms of scale, nature-based carbon credits⁴ made up 45% of the total VCM transaction volume in 2024 (up from 37% in 2023) and 39% of total VCM retirement volume in 2024. The total reported VCM transaction value was USD 535 million in 2024 (a decrease of 29% from 2023). While the average price in the VCM declined by 5.5% in 2024, Afforestation, Reforestation / Revegetation (ARR), Agroforestry, and Blue Carbon projects, which generate removal credits,⁵ saw average price increase by 20 percent, reflecting a strong buyer preference for these types of nature-based carbon credits (EcosystemMarketplace, 2025^[93]).

With the shifting buyer preferences towards nature-based removal credits, afforestation, reforestation and revegetation (ARR) activities have attracted significant investments in recent years. More than USD 9 billion was invested in such activities between 2021 and 2023, accounting for 42% of expenditure on carbon credit-generating activities in the same period (MSCI, 2024^[94]). As of Q3 2024, more than 100 projects have achieved at least one class of Climate, Community & Biodiversity (CCB) certification (out of about 2200 nature-based projects in the VCM, counting both registered projects and those seeking registration) (MSCI, 2024^[94]).⁶

Nature-based carbon credits are also beginning to emerge through jurisdictional programmes, which have been promoted to address carbon accounting and governance issues in REDD+. Jurisdictional approaches are government-led programmes that cover an entire administrative area and where results are measured against a jurisdiction-wide reference level. One of the advantages of jurisdictional carbon credit-generating activities is that they account for intra-jurisdictional leakage. They can also include non-permanence buffers to account for the risk of reversals in the future. As of Dec 2024, 43 jurisdictional REDD programmes were registered in ART-TREES (Architecture for REDD+ Transactions), JNR (Jurisdictional and Nested REDD+ under the Verified Carbon Standard) and the Forest Carbon Partnership Facility (FCPF) (Jung and Kim, 2025^[95]). Under this framework, ART is working to launch a new certification “Beyond Carbon Benefits” in 2026, incorporating forest services, biodiversity, and socio-cultural modules.

Another key challenge common to both project-level and jurisdictional carbon credit-generating activities in REDD+ and other nature-based carbon credits is the construction of the baseline, against which credits are issued. Methodologies typically rely on ex-ante forecasts of counterfactual outcomes before the intervention begins, which can lead to over-crediting (Rau et al., 2025^[96]). The authors compare these with methods to construct counterfactuals based on ex-post estimation using pixel-matching and find the latter to be more reliable. To balance the need for upfront financing with robust quantification of additionality, they call for carefully designed governance structures to incorporate mechanisms to allow credit issuance to be adjustable over time as ex-post measurements are gathered to complement ex-ante forecasts. These issues are examined in further detail in OECD (2026^[97]).

Turning to the actual biodiversity impacts of carbon credit-generating projects, there is to date a lack of empirical research and evidence in this area (Zhou and Almond, 2025^[92]), while calls for explicitly monitoring biodiversity in nature-based solutions and nature-based carbon credits are growing. For example, (Tedersoo et al., 2023^[98]) argue that to effectively integrate biodiversity into carbon crediting, biodiversity needs to be robustly and efficiently measured. Similarly, (Lo and Rwaluk, 2023^[99]) highlight the need to consider, quantify and monitor a range of biodiversity and ecosystem function indicators in nature-based solutions to demonstrate and maximise biodiversity co-benefits.

A 2024 study analysed all certified ARR projects from Verra, Gold Standard, American Carbon Registry and Cercarbono, which together account for 82% of total ARR credits, as well as several projects in the certification process. It finds that most projects are commercial plantation forests, followed by forest

restoration, agroforestry, and wetland restoration. Overall, the study calls for greater transparency and standardisation in project documentation (Bernal, 2024^[100]).

A first comprehensive empirical investigation of biodiversity considerations in the voluntary carbon markets is provided by (Zhou and Almond, 2025^[92]). The analysis is based on a novel dataset that combines detailed project-level data from major carbon registries with satellite-based metrics of human influence on ecosystems, firm-level financial and environmental data, and information on relevant regulatory events. Analysing data on 1 730 geocoded VCM projects with 5 years of data before and after their implementation, they find that these carbon credit-generating projects are associated with a 3.7% increase in human impact on local ecosystems, as measured by the Human Influence Index. Other studies have found that, in the context of REDD+, forest carbon projects can reduce deforestation, albeit by substantially lower levels than claimed by project developers (Swinfield et al., 2026^[101]).

Highlighting both risks and opportunities of voluntary carbon markets in aligning climate mitigation with biodiversity protection, García and Moros (2025^[102]) consider how biodiversity co-benefits could be fostered in both the regulated and VCM. They suggest that these markets are complemented with biodiversity zoning, by the State, so that a comprehensive range of ecosystem services and multiscale and multitemporal interactions can be recognised. For example, companies may pool their resources into a fund designed to help ensure the conservation and restoration of predefined strategic ecosystems. They also suggest that such funds could be used to complement or leverage existing government conservation efforts.

A recent report examines and compares biodiversity-related criteria in existing carbon protocols for natural climate solutions⁷ and develops six principles for pursuing biodiversity and carbon outcomes in VCMs (JPMorganChase and Carbon Direct, 2025^[103]). The criteria include whether they require or encourage planting or managing for native species or the use of assisted natural regeneration, and whether projects are required to report on measurable and verifiable biodiversity outcomes. It focuses on projects that result in carbon removal, rather than on avoidance and reduction, covering project types such as ARR, agricultural soils, improved forest management (IFM) and mangroves. The six principles for incorporating high-quality biodiversity outcomes in VCM projects are: (1) Maximise available and suitable habitat with low fragmentation and high connectivity; (2) Identify a clear reference ecosystem to site and design appropriately; (3) Plant and manage native species and use assisted natural regeneration as appropriate; (4) Embed resiliency through adaptive management and planning for pollution, climate change, and other stressors; (5) Balance integrating local livelihood considerations alongside biodiversity and generate economic benefits for local communities to ensure long-term project success; and (6) Report measurable and verifiable outcomes that are durable through time (JPMorganChase and Carbon Direct, 2025^[103]).

Good practice recommendations for promoting biodiversity co-benefits in nature-based carbon credits:

- Integrate biodiversity into the standards and guidance governing voluntary carbon markets, going beyond safeguards to avoid negative impacts on biodiversity and process compliance.
- For afforestation and reforestation projects, avoid monocultures and minimise the use of exotic species, prioritising native species instead.
- Design project boundaries to encompass areas with both high carbon and high biodiversity benefits.
- Encourage and support the emergence of tiered certification approaches that assure carbon and biodiversity benefits – alongside social benefits.
- Monitor biodiversity explicitly, combining periodic field surveys and remote sensing as appropriate; report; and independently verify results.
- Encourage academic analysis that compares different approaches (e.g. project-level and jurisdictional approaches) to promoting biodiversity co-benefits in nature-based carbon credits and the biodiversity impacts over time.

3.1.5. Biodiversity credits for voluntary contributions or insetting

Biodiversity credits (sometimes referred to as biodiversity certificates) are intended to mobilise private finance for activities that deliver biodiversity gains. While biodiversity credits have garnered considerable interest since 2022, there is still a lack of conceptual clarity regarding the definition, delimitation and functioning of biodiversity credits (Wunder et al., 2025^[104]). For example, some proponents define biodiversity credits narrowly as voluntary mechanisms intended solely to generate and reward biodiversity gains (i.e. explicitly not associated with any negative impacts of a purchasing firm). Others use the term to encompass both projects generating voluntary contributions to biodiversity and in-setting, as well as those generating biodiversity units under biodiversity offset programmes which require an assessment of a firm's negative impacts to determine how much needs to be offset (e.g. IAPB (2024^[105])). The lack of a clear definition and consensus on what a biodiversity credit is leads to an inconsistent use of terms, risking confusion. In this report, biodiversity credits are treated as distinct from biodiversity units generated under NNL or NG offset programmes, which are embedded in the mitigation hierarchy (covered in section 3.1.3).

Finance mobilised via voluntary biodiversity credits

Estimates on the size of the voluntary biodiversity credit market have varied significantly. They are also difficult to compare due to the level of granularity provided across sources. For example, based on a survey in which 16 organisations responded, between USD 325 000 and USD 1 870 000 worth of voluntary biodiversity credits were estimated to have been sold cumulatively as of September 2024 (Pollination Foundation, 2024^[106]). A BloombergNEF assessment identified 80 proposed or operational credit generating projects (i.e. excluding biodiversity offsets), developed by governments, NGOs and private companies. Around half of the projects issued credits or completed transactions with buyers, with verifiable sales reaching USD 3.7 million as of October 2025 (BloombergNEF, 2025^[107]). According to a comprehensive online database from bloomlabs, sales in voluntary biodiversity credits amounted to USD 6 million as of April 2026.⁸

Despite growing attention, there remains a mismatch between earlier expectations and current practice on the ground. For instance, BloombergNEF (2025^[107]) states that biodiversity credits “continue to attract attention but no buyers” and that the market will continue to struggle in the absence of a concrete demand driver. Similarly, Swinfield et al. (2024^[108]) argue that even if environmental integrity issues associated with the emerging nature credits were addressed, “investor confidence will only materialize at scale when there are clear, long-term demand signals, underpinned by regulation, as with regulated carbon markets such as the European Union Emissions Trading Scheme”.

Looking at the relative sizes of compliance versus voluntary carbon markets as an example, the total value of traded credits in the voluntary carbon markets was USD 535 million in 2024, only a marginal fraction of the USD 947 billion traded in the compliance markets in the same year (ICMA, 2025^[109]), noting that liquidity in compliance carbon markets is higher than in voluntary markets. Such programmes are akin to the regulated compliance biodiversity offset programmes.

Environmental integrity is a central concern in the development of voluntary biodiversity credit projects. Issues such as additionality, leakage and permanence are treated in the development of a biodiversity credit project are key in determining whether reported biodiversity gains are real or not. Existing studies that have examined how these issues have been addressed in the privately-led voluntary biodiversity credit market find large heterogeneity in approaches used, highlighting various risks and uncertainties that would need to be resolved (Kim et al., 2025^[110]) (Wauchope et al., 2024^[111]) (Wunder et al., 2025^[104]).

Robust counterfactual approaches are arguably the most important requirement for ensuring that credits are delivering biodiversity gains (Wunder et al., 2025^[104]). Avoided loss measures (i.e. rather than restoration measures) are particularly problematic due to their greater uncertainty, as they rely on speculative counterfactuals and carry the risk of inflating baseline threats. Independently determined,

dynamic, counterfactual and ex-post baselines could help ensure additionality (Wunder et al., 2025^[104]). An assessment of 11 biodiversity credit suppliers' methodologies and governance frameworks against 6 "high-integrity" criteria (including e.g. independent validation and verification, transparency with regard to metrics/ methods and biodiversity data collected from projects), finds that validation and verification processes are predominantly governed by suppliers, registry access is restricted, and public disclosure of information is limited (Kim et al., 2025^[110]). The authors argue that operationalising integrity in voluntary biodiversity credit markets requires two foundational enablers: systemic transparency and regulatory intervention.

Given the uncertainties and possible environmental integrity issues associated with purely privately-led voluntary biodiversity credit schemes, the remaining section focuses on the state of development in voluntary biodiversity credits that include some level of government oversight, covering Australia, UK, New Zealand, France, Finland and the European Union (as proposed by the European Commission). A recent report by the International Advisory Panel on Biodiversity Credits (IAPB) identifies and summarises 19 government-led approaches to nature credit markets (IAPB, 2025^[112]); however, at least 10 of the approaches covered in the IAPB report are mandatory biodiversity offset programmes⁹ under an overall objective of NNL or NG (e.g. England's Biodiversity Net Gain policy, Habitat Banking in Germany, and the U.S. Wetland Mitigation Scheme). As noted above, this OECD report treats biodiversity offset programmes as distinct from biodiversity credit initiatives.

State-of-play of voluntary biodiversity credit schemes with government oversight

Australia's Nature Repair Market (NRM) is a voluntary, national market established under the Nature Repair Act to incentivise action to restore and protect biodiversity. The NRM enables individuals and organisations, including landholders, farmers, First Nations people, conservation groups and investors, to undertake nature repair projects to generate a tradable certificate. Projects must be approved by the Clean Energy Regulator, meet the requirements of an approved method, and be registered on the publicly available Biodiversity Market Register. Project proponents can apply for a biodiversity certificate when the biodiversity benefit has been achieved or is likely, with each project able to generate only one certificate over its duration. The certificates differ in value depending on the attributes of the project. The NRM was officially launched in March 2025 with the establishment of the first approved project method –Replanting Native Forest and Woodland Ecosystem. This method allows for the re-establishment of native vegetation on cleared land and permits stacking of biodiversity certificates with carbon credit units under the Australian Carbon Credit Unit (ACCU) scheme. Additional project methods are expected over the next few years. As of August 2025, one project was registered in the Biodiversity Market Register.¹⁰ No biodiversity certificate had been issued.

In the UK, a Nature Markets Framework was released by HM Government in March 2023 (HM Government, 2023^[113]) with the intent to scale up private investment in nature recovery and sustainable farming. Nature markets are broadly described to cover carbon, nature recovery, clean water other benefits, and encompass both voluntary markets and markets driven by regulatory obligations. As part of this work, the British Standards Institution, in collaboration with the government, released an overarching principles standard for nature (BSI Flex 701) in March 2025, with further, more specific standards, including for biodiversity, expected in the future. Following this, a consultation document on "Voluntary carbon and nature markets – raising integrity" was released in April 2025 (Department for Energy Security and Net Zero, 2025^[114]). The consultation document seeks public views on the implementation of the UK government's integrity principles. Voluntary carbon and nature markets (VCNM) comprise voluntary carbon markets (VCMs) and voluntary nature markets (VNM), the latter encompassing "payments for activities that deliver environmental outcomes through nature-based activities, including biodiversity, and ecosystem services, such as nutrient mitigation and nature-based carbon sequestration. Each credit represents a measured increase in biodiversity or ecosystem service".

In New Zealand, the Ministry of Environment and the Department of Conservation released a discussion paper for public input exploring the possible use of a biodiversity credit system in 2023 (Ministry of Environment, 2023^[115]). A subsequent paper in 2025 argues that the preferred approach is an integrated voluntary market covering both nature and climate (Ministry of Environment, 2025^[116]). Under the proposed model, the private sector would be responsible for establishing project standards, developing and certifying projects, transacting credits, and monitoring and reporting on projects. The government would be responsible for supporting standard setting, supporting assurance (via processes for approving standards, accreditation and accountability), and promoting transparency (via disclosure of core project information and basic transaction data availability via a national public registry). A number of privately funded pilots are underway which are intended to help inform further refinement of the proposed government approach.¹¹ The pilots are diverse and cover initiatives led by charitable trusts, farming businesses (e.g. Pāmu Farms and Silver Fern Farms) or existing private sector-led voluntary biodiversity credit issuers such as Ekos.

France introduced the possibility of voluntary biodiversity credits in 2023 as an extension of its 2016 mandatory biodiversity offsets law (i.e. with the obligation to avoid, reduce and compensate for residual adverse biodiversity impacts). Under the 2016 Biodiversity Law, developers obligated to undertake compensation measures had to do so themselves (i.e. one-off projects). While the 2016 Biodiversity Law also enabled the use of government-certified mitigation banks via natural compensation sites (sites naturels de compensation – SNC), only one SNC had ever been approved by the State (Aubry and Gaucherand, 2023^[117]). The Green Industry Law of 2023 amended the Environment Code and replaced SNC with broader natural compensation, restoration and renaturation sites (SNCRR). In addition, the Law specified that SNCRR can be used both by project developers legally mandated to compensate for adverse impacts on biodiversity and by public and private persons wishing to voluntarily contribute to the restoration of biodiversity. Three complementary texts were subsequently introduced in November 2024, setting out the rules for establishing, approving and operating SNCRR (e.g. Decree No 2024-1052 and -1053). The SNCRR system is nascent and information on demand for any voluntary biodiversity units is not yet publicly available. Two new sites were approved in 2024 and several others are emerging. The SNCRR scheme was renamed ‘France Crédits Biodiversité’ in May 2026, in order to make it more attractive and to increase its visibility, particularly among voluntary buyers.

In Finland, following the introduction of the voluntary ecological offset programme (discussed in section 3.1.3), the government examined how the programme could be used for purposes beyond offsetting harmful activities from development projects, such as to generate voluntary biodiversity credits (Borgstrom, 2025^[118]). A proposed amendment to the Nature Conservation Act was submitted to Parliament in May 2026.¹² The credits, certified by government authority in the same way as the offset units, could be used by companies, communities and citizens for nature-positive purposes. Large companies would be required to comply with the mitigation hierarchy to avoid greenwashing.

The European Commission released a Roadmap towards Nature Credits [COM(2025) 374 Final] in July 2025. It proposes a voluntary two-step approach for private investment in nature, comprised of certificates followed by nature credits. Certificates would be issued to assure that proposed actions are implemented in line with pre-defined criteria or principles. Certification would assess the design and implementation of the action as well as the effects achieved and expected – which would be independently verified. Over time, the project would be monitored, with nature credits progressively issued as results are demonstrated. It states: “a nature credit could be considered as a unit that represents a nature-positive outcome, derived from a certified and independently verified action and quantified using a recognised biodiversity metric or indicator”. An open consultation seeking early feedback¹³ and an expert group on nature credits was also launched, the latter comprising about 140 members and initially focussing on methodologies, metrics and safeguards. Complementing this, pilot projects were initiated in 2025 in France (for wetland restoration), Estonia (for sustainable forestry) and in Peru, to test possible approaches and methods, and are expected to run through to 2027.

While the government of Canada has not publicly announced any intentions to develop or oversee a voluntary biodiversity credit scheme, the Ministry of Environment and Climate Change Canada (ECCC) launched a three-year Conservation Exchange (CX) pilot in 2021, funded as part of the Enhanced Nature Legacy programme. Its core objective was to increase voluntary business investment in nature conservation. The pilot was subsequently extended to March 2026 (Box 3.8).

Box 3.8. The Conservation Exchange (CX) pilot in Canada

Under the Conservation Exchange (CX) pilot, businesses that voluntarily fund conservation projects delivered by proven conservation organisations are eligible to receive a government-backed certificate to recognise the benefits of the conservation work they are funding. Each certificate will include information about the biodiversity benefits of the conservation work that is comparable across projects.

The ECCC Audit and Evaluation branch released an evaluation of the CX pilot in June 2024 providing key findings, challenges and lessons learned. Challenges cited included that: conditions for high demand were not realised; the process for estimating biodiversity benefits is not fit for high volumes of projects; impacts beyond outputs are difficult to assess; and that costs are high on a per-project basis. The report notes that the actual spending on the CX pilot from 2021-22 to 2023-24 was CAD 5 million (~USD 3.8 million), during which time four projects were in progress. The three lessons learned were that: the CX pilot is a relevant and timely intervention for the ECCC; delivery and design should be strengthened to maximise impact; and more effort, data and time are needed to assess results.

The CX pilot was extended to 31 March 2026. Some – albeit limited – information on the projects is publicly available on the Ministry’s website. As of May 2026, six projects were listed, with funders including Aviva, Nutrien and TC Energy, with no certificates granted to date.

Source: [Conservation Exchange Pilot - Canada.ca](https://www.ec.gc.ca/conservation-exchange-pilot-canada-ca) and (ECCC, 2024^[119]).

Good practices for mobilising finance through voluntary biodiversity credits

The government-led initiatives described above are still in early stages of development, rendering it difficult to draw insights or conclusions on the possible scale of voluntary biodiversity credits to attract significant private finance for biodiversity. Possible good practices for consideration to foster environmental integrity and market certainty in voluntary biodiversity credits may include:

- **Ensure full transparency in key design features:** As privately-led voluntary biodiversity credits continue to emerge, full transparency is needed including on social safeguards and outcomes over time.
- **Consider standardised baselines:** Standardised baselines help reduce the risk of over-crediting – an approach that has been suggested under jurisdictional nature-based carbon credits.
- **Adopt defensible metrics:** Biodiversity credit schemes depend on the appropriate choice of metrics that capture key components of biodiversity, are consistent and can be operationalised.
- **Ensure robust accreditation and independent third-party verification:** Environmental effectiveness of biodiversity credit schemes and market confidence depends on credit projects delivering on their stated achievements.
- **Consider allowing voluntary purchase of biodiversity units from habitat banks operating under mandatory biodiversity offset programmes:** Voluntary contributions to biodiversity could be allowed once well-functioning habitat banks under biodiversity offset programmes have been established and have demonstrated environmental effectiveness.

- **Develop rules on associated environmental claims:** Clear guidance and standards for biodiversity-related claims would be needed to reduce risks of greenwashing and misleading claims.

3.2. Financial sector instruments and mechanisms

Financial sector instruments can be grouped into three broad categories: debt instruments such as bonds and loans; equity instruments including public and private equity funds; and insurance or risk-transfer mechanisms. These instruments operate across listed markets, which offer scale and liquidity for institutional investors, and non-listed markets, which provide bespoke structures for smaller, higher-risk projects and early-stage businesses.

In the context of biodiversity finance, financial sector instruments can be deployed through either corporate finance or project finance structures. In corporate finance, capital is provided to a firm or fund, with returns linked to its overall balance sheet. By contrast, biodiversity-related project finance depends on generating investable cash flows from specific assets or activities, such as sustainably produced commodities or priced environmental externalities (e.g. through biodiversity mitigation banks, carbon markets or water payments) and often involves special-purpose vehicles, blended finance and higher risk tolerance (section 4.2).

Selecting and deploying these instruments effectively requires matching them to the maturity, cash-flow profile and risk characteristics of the underlying activities being financed (Denke et al., 2023^[120]). No single instrument is universally appropriate. The sections that follow examine each instrument category in turn, assessing how it functions, where it has been applied, what its limitations are and what conditions are needed for it to contribute meaningfully to biodiversity finance at scale.

3.2.1. Debt: biodiversity bonds and loans

Debt instruments can mobilise capital for biodiversity by leveraging established financial structures and relatively predictable return profiles. Bonds and loans are most effective at mobilising finance where revenues are stable, risks are reasonably well understood, and investment horizons are compatible with repayment obligations. In practice, bonds are typically used for larger and more standardised investments, enabling the mobilisation of significant volumes of capital, while remaining less accessible for smaller, early-stage or more complex biodiversity initiatives with less predictable cash flows.

Despite their potential, the application of debt instruments to biodiversity finance remains constrained. Key challenges include the limited availability of predictable and durable cash flows from nature-based activities, difficulties in measuring, monitoring and verifying ecological outcomes, and the complexity of credibly linking financial terms to biodiversity performance. As a result, biodiversity considerations have so far featured only marginally across bond and loan markets. The effectiveness of debt instruments is therefore highly context-dependent, reflecting the underlying revenue models, risk profiles and policy support frameworks.

Loan-based instruments, including use-of-proceeds and sustainability-linked loans, are widely used by banks and development finance institutions. Compared to bonds, loans generally offer greater flexibility in design and implementation, making them more suitable for corporate actors, project developers and smaller-scale initiatives that do not access capital markets directly. However, individual loan transactions typically involve smaller deal sizes and mobilise lower aggregate volumes of capital than bond issuances, resulting in a more incremental contribution to overall biodiversity finance.

Across debt markets, a distinction can be made between unlabelled instruments, which account for most corporate borrowing, and labelled instruments such as use-of-proceeds and sustainability-linked bonds.

Labelled instruments vary in design, level of standardisation, and in some cases are self-labelled. Voluntary principles and guidance, particularly those developed by the International Capital Market Association (ICMA) and the Loan Market Association (LMA), provide high-level frameworks to promote good practices. However, their voluntary nature can result in inconsistent application and variable credibility. More prescriptive standards and taxonomies have emerged, particularly in bond markets, to strengthen comparability and integrity, though their application to biodiversity-specific activities remains limited and uneven (Box 3.9).

Box 3.9. Guidance and standards for labelled bonds

Voluntary standards developed by the ICMA underpin the global labelled bond market. The Green Bond Principles and Sustainability-Linked Bond Principles provide high-level, process-based guidance on elements such as use of proceeds, project selection, reporting and external review. They are complemented by biodiversity-related guidance, including the Blue Bond Guide and ICMA's optional "Nature Bond" designation.

These principles are non-prescriptive and do not define eligibility thresholds or performance requirements, relying instead on issuer interpretation and market discipline. As a result, application varies across issuers and jurisdictions. The principles are best understood as a common reference point rather than a guarantee of environmental integrity or outcomes.

More prescriptive standards have emerged, typically building on the ICMA. The Climate Bonds Standard provides detailed sector criteria, including nature-based activities such as sustainable forestry and landscape restoration. It requires at least 95% of proceeds to fund assets or projects strictly aligned with eligibility criteria and demands external certification. On the regulatory side, the EU Green Bond (EuGB) Standard promotes alignment with the EU Taxonomy, external review, allocation tracking and impact reporting. It is legally binding for those choosing to use the official label European Green Bond. While biodiversity has received less attention than climate, the taxonomy includes ecosystem protection and restoration, with further guidance expected. Both EuGB and the Climate Bonds Standard use taxonomy-based classifications, creating science-based thresholds and interoperability across instruments.

Source: (Climate Bonds Initiative, 2025^[121]), Climate Bonds Standard; (EC, 2025^[122]), The European Green Bond Standard – Supporting the transition; (ICMA, 2024^[123]), Sustainability-Linked Bond Principles Voluntary Process Guidelines; (ICMA, IFC, UNEP FI, UNGC, 2023^[124]), Bonds to Finance the Sustainable Blue Economy: A Practitioner's Guide; (ICMA, 2025^[125]), Sustainable Bonds for Nature: A Practitioner's Guide; (ICMA, 2025^[126]), Green Bond Principles, Voluntary Process Guidelines for Issuing Green Bonds .

The following subsection examines different types of bonds and loans, illustrating their application to biodiversity conservation, sustainable use and restoration, and identifying the conditions under which they may be most relevant and effective.

Biodiversity bonds

A bond is a fixed-income instrument¹⁴ through which a public or private issuer borrows capital from investors, with a commitment to repay the principal at maturity and, typically, periodic interest payments ("coupons"). Bonds are typically repaid from the issuer's general revenues and do not transfer project-level performance risk to investors. As such, they are generally used to finance or refinance pre-identified and planned expenditures, supporting the scaling of implementation rather than early-stage project development.

Bonds can be issued by public and private actors such as sovereigns, public development banks, corporates or financial institutions. In the case of sovereign or supranational issuers, bond proceeds are typically used to finance or refinance public expenditure, even when raised from private investors. Bonds that are linked either to activities intended to benefit biodiversity or to biodiversity outcomes are referred in this report as biodiversity bonds. They fall into four broad categories that are not necessarily mutually exclusive:

1. Use-of-proceeds (UoP) or thematic bonds – green, blue and sustainability bonds;
2. Sustainability-linked bonds – where the financial terms are tied to issuer performance on sustainability KPIs, including biodiversity;
3. Environmental impact bonds and other outcome-based bonds – instruments in which investor returns are contingent on the independently verified delivery of specified environmental outcomes; and
4. Bespoke, privately issued conservation bonds.

Use-of-proceeds bonds

A defining feature of UoP bonds is that their proceeds are ring-fenced and governed by clear project selection, management-of-proceeds and reporting processes. This creates a clearer line of sight from capital to activities than general corporate financing, improving accountability and facilitating impact reporting. However, the strength of this link depends on the robustness of the eligibility criteria, safeguards and reporting practices applied in practice, rather than on ring-fencing alone.

UoP bonds include green, blue and sustainability bonds. Green bonds allocate proceeds exclusively to eligible green projects, from renewable energy through to sustainable agriculture projects (ICMA, 2025^[126]). Blue bonds, a specialised form of green bonds, finance marine and ocean-based projects exclusively (ICMA, IFC, UNEP FI, UNGC, 2023^[124]). Sustainability bonds allocate proceeds to projects with both green and social objectives (ICMA, IFC, UNEP FI, UNGC, 2023^[124]). While some UoP bonds explicitly target biodiversity outcomes, others – particularly those focused on climate mitigation or adaptation – may contribute indirectly when nature-based solutions are employed. At the same time, certain activities commonly financed through UoP bonds, such as low-emissions transport infrastructure or renewable power generation, may have negligible or even adverse biodiversity impacts depending on project design, siting and governance. This underscores the importance of clear eligibility definitions, biodiversity safeguards and project-level assessment.

UoP bonds are well suited to large-scale or aggregated programmes such as sustainable agriculture, forestry and ecosystem restoration. Typically, issuances range from tens of millions to several billions of dollars (WEF, 2025^[127]). For investors, these instruments offer exposure to sustainability-oriented finance within the familiar structure of traditional fixed-income products, along with reputational benefits and potential reductions in nature-related risks. Most UoP bonds are backed by the issuer's overall creditworthiness rather than project performance, resulting in risk profiles comparable to conventional bonds. However, aggregation across diverse projects can obscure the biodiversity contribution of individual activities unless transparency and reporting are sufficiently granular.

In practice, this model favours large, investment-grade issuers – some municipalities, sovereigns, supranationals (Box 3.10), and large corporates (Box 3.11) – that can absorb transaction and reporting costs while meeting investor expectations on scale and liquidity. Smaller issuers, entities with lower credit ratings, or those operating in emerging markets face higher barriers to entry and often require credit enhancement, such as guarantees or concessional finance, or anchor investments from development finance institutions to access these markets.

For issuers, UoP bonds provide access to a growing pool of sustainability-focused investors, can strengthen sustainability credentials and may benefit from tax incentives or preferential regulatory

treatment (IEEFA, 2025^[128]). They also help align financing with international commitments, including the Paris Agreement and the Sustainable Development Goals. These benefits must be weighed against higher transaction and compliance costs, ongoing reporting obligations, and heightened reputational risk where standards, disclosure or assurance are weak, increasing exposure to greenwashing concerns (IEEFA, 2025^[128]). External reviewers, such as second-party opinion providers and verifiers, can enhance transparency by assessing alignment with standards, taxonomies and management-of-proceeds arrangements. However, because they are typically appointed and remunerated by issuers, their role may give rise to real or perceived conflicts of interest (OECD, 2025^[129]).

Box 3.10. Sovereign and supranational biodiversity-related UoP bonds

Seychelles’ Blue Bond: In 2018, Seychelles issued the first sovereign blue bond – a USD 15 million instrument to finance sustainable ocean and marine conservation. The bond was backed by a USD 5 million World Bank guarantee and a USD 5 million concessional loan from the GEF to subsidise coupon payments, reducing borrowing costs and attracting impact investors. Sold to three U.S. investors, the 10-year bond funded the Blue Investment Fund, supporting marine protected areas, fisheries governance, spatial planning and coastal restoration. Outcomes included expanding protected areas, improved fisheries monitoring and greater domestic finance access. Lessons include the need for inclusive design, robust monitoring, participatory governance, strong institutional capacity, and long-term continuity to avoid “blue washing” and maximise impact.

France’s Green Bonds (OAT vertes): France issued its first sovereign green bond (*obligations assimilables du Trésor vertes*) in 2017 and had mobilised EUR 87.26 billion in green bonds by end 2025. Proceeds fund climate mitigation, adaptation, biodiversity, sustainable use and protection of water and marine resources, and the transition to a circular economy. Eligible expenditures are rated environmentally favourable as per France’s green budgeting methodology. Transparency and integrity are ensured through an independent council and third-party verification. In 2023, 11% (EUR 1.121 billion) of green bond receipts were allocated to biodiversity, and 8% (EUR 1.116 billion) in 2024. These funds primarily finance capacity building, research and data (including satellite observation), bilateral co-operation, and cross-cutting projects.

Netherlands’ Green Bonds: The Netherlands is a European leader in green bond issuance and the first AAA sovereign to issue one. Its Green Bond Framework, updated in 2023, aligns with the EU Taxonomy. While lacking a standalone biodiversity category, biodiversity and nature-based solutions are integrated into climate adaptation and sustainable water management. In 2019, a EUR 5.98 billion green bond financed climate adaptation projects emphasising nature-based solutions – such as restoring floodplains, relocating dikes, and creating channels to give rivers more space – while improving biodiversity. Certified under the Climate Bonds Standard’s Water Infrastructure Criteria, the bond was oversubscribed by over EUR 15 billion.

Asian Development Bank (ADB): In 2024, ADB issued its first biodiversity and nature bond under the Theme Bonds for Sustainable Development programme. The 10-year, USD 100 million bond coincided with COP16, reinforcing alignment with global biodiversity goals. Arranged by Crédit Agricole Corporate Investment Banking and purchased by Dai-ichi Life Insurance Company of Japan, the issuance leveraged ADB’s AAA rating to attract institutional investors. Proceeds will fund nature-positive projects across Asia and the Pacific, including ecosystem restoration, sustainable land use and climate-resilient infrastructure. The bond is closely tied to ADB’s Environment Action Plan (2024-30), “Towards a Nature Positive Asia and the Pacific,” embedding the transaction within its broader environmental strategy.

Source: (AFT, 2024^[130]), GREEN OATS: Allocation and Performance Report 2024; (AFT, 2023^[131]) GREEN OATS: Allocation and Performance Report 2023; (ADB, 2024^[132]), [ADB Issues Its First Biodiversity and Nature Bond | Asian Development Bank](#); (Alliance for Global Water Adaptation, 2019^[133]), [Netherlands invests in ecosystems to cope with climate change impacts | PreventionWeb](#); (Crédit Agricole, 2024^[134]), [The Asian Development Bank issues its first Biodiversity and Nature bond - Crédit Agricole CIB](#); (March et al., 2024^[135]), Evaluating the World's First Sovereign Blue Bond: Lessons for Operationalising Blue Finance; (Dutch State Treasury Agency, 2025^[136]), State of the Netherlands Green bond report 2024; (Dutch State Treasury Agency, 2023^[137]), State of the Netherlands Green Bond Framework, Update 2023; (WBG, 2019^[138]), Seychelles: Introducing the World's First Sovereign Blue Bond.

Box 3.11. Corporate use-of-proceeds bonds for biodiversity and broader nature themes

Banco Bilbao Vizcaya Argentaria (BBVA) – Colombia: In 2024, BBVA issued a USD 70 million biodiversity-focused green bond with a three-year tenor, subscribed by IDB Invest and IFC. Proceeds are earmarked for biodiversity-positive projects across six thematic areas, including sustainable land and water use, nature-based solutions, forestry and ecotourism, consistent with IFC's biodiversity finance guidance. IDB Invest is also providing advisory support to integrate biodiversity risks and opportunities into BBVA Colombia's risk management and client engagement.

CMPC – Chile: In 2017, CMPC became the first Chilean corporate to issue a green bond, raising USD 518 million with a 10-year tenor. The bond was aligned with the ICMA's Green Bond Principles (GBP) and fully allocated by 2018 across four categories: sustainable forest management, biodiversity preservation and forest restoration, pollution prevention and control, and energy efficiency. Biodiversity projects were allocated USD 1.74 million and included categorisation, description and conservation of native forests, a native forest restoration programme carried out in partnership with FSC and Certfor, and the maintenance of High Conservation Value Areas. Other project categories, notably sustainable forest management, cannot be assumed to deliver biodiversity benefits – e.g. they involve (re-)planting of non-native species.

NWB Bank – Netherlands: Since 2014, NWB Bank has issued 15 Water Bonds for a total of EUR 9 billion to finance the activities of the Dutch water authorities. In 2024, a total of EUR 1.1 billion was issued, including a EUR 1 billion 7-year Benchmark Water Bond. Proceeds from the Water Bonds are used to provide loans to the Dutch water authorities who are responsible for flood protection, water management and water quality, including through nature-based solutions. This illustrates an example of nature-themed bonds that could deliver co-benefits for biodiversity.

Note: While BBVA is a bank rather than a non-financial corporation, bonds issued by entities other than municipalities, sovereigns, or supranationals are typically classified as corporate bonds, which include both financial institutions and corporates.

Source: (BBVA, 2024^[139]), BBVA Colombia and IFC announce the financial sector's first biodiversity bond issue; (CMPC, 2018^[140]), CMPC Green Bond 2018 Final Report, www.cmpc.com/assets/uploads/2023/06/GREEN-BOND-2018.pdf; (IDB, 2024^[141]), IDB Invest and BBVA Colombia Announce Successful Placement of First Biodiversity Bond by a Financial Institution in LAC, <https://idbinvest.org/en/news-media/idb-invest-and-bbva-colombia-announce-successful-placement-first-biodiversity-bond>; (NWB, 2024^[142]), Water Bond Report 2024, https://nwbbank.com/application/files/9217/5610/4802/Water_Bond_Report_2024.pdf

The similarity of UoP bonds to conventional bonds has facilitated broad market access, contributing to the rapid growth of the green bond market since EIB issued the first green bond in 2007. Annual green bond issuances increased approximately 81% from 2020 to 2024, with global self-labelled green bond issuances reaching USD 800 billion in 2024 of which USD 671 billion are aligned with Climate Bonds' definition (Climate Bonds Initiative, 2025^[143]).¹⁵ However, nature-themed bonds¹⁶ – particularly those explicitly targeting positive biodiversity outcomes – remain a small share of this total, with most proceeds going towards climate mitigation,¹⁷ particularly renewable energy and energy efficiency.

Comprehensive and comparable data on biodiversity-related allocations within UoP bonds remain limited. This reflects inconsistencies across taxonomies, reporting standards and disclosure practices, as well as differences in how issuers classify and report biodiversity-related expenditures. In many cases, there is a substantial gap between the headline inclusion of biodiversity in use-of-proceeds frameworks and actual spending on biodiversity-specific activities (Box 3.12). These limitations complicate efforts to track, compare and scale finance for biodiversity within the broader sustainable finance landscape and highlight the need for stronger standards, transparency and assurance.

Box 3.12. Understanding estimates of biodiversity finance deployed through bonds

Estimating the volume of finance for biodiversity raised through green and sustainability bonds is challenging and subject to both inflation and misinterpretation. This reflects three main factors:

First, definitions of what qualifies as biodiversity and nature finance vary, and the absence of harmonised taxonomies and global standards limits comparability. Developing consistent classification systems would help improve accuracy and transparency.

Second, estimates of bond issuance with biodiversity UoP typically value the entire issuance. However, biodiversity may be one of several listed uses of proceeds and typically accounts for a small share of the overall bond issuance.

Third, the stated use of proceeds at issuance does not always match the final allocation of funds, which is often reported with significant delay. Issuers have no obligation to allocate proceeds to all framework UoP and many frameworks have a long list of potential UoP.

One analysis found that for the period 2021-22 only 3.7% of funds raised from green bonds that listed biodiversity among their eligible categories were ultimately allocated to biodiversity projects. A separate analysis of 2 069 green and sustainability bonds with allocation data reported between 2022-24 found that less than 1% of proceeds were allocated for biodiversity.

While current estimates may overstate biodiversity-related bond finance for the reasons noted above, they may also understate it where bonds support activities such as sustainable land management or pollution control that deliver biodiversity benefits without explicitly identifying them as biodiversity-related.

From an accounting and reporting perspective under Target 19 of the Kunming-Montreal Global Biodiversity Framework it is important to note that while green bonds attract private investment, most biodiversity-related bonds have been issued by supranationals, governments or municipalities. As a result, they are generally classified as public rather than private finance.

Source: Authors based on findings of (Bromley, 2024^[144]), Biodiversity Finance Factbook: Biodiversity Cop16 Edition; (Christiansen et al., 2025^[145]), Off the charts? Reasons to be skeptical of the growth in biodiversity finance, 10.1016/j.cosust.2025.101544; (Environmental Finance, 2025^[146]), Environmental Finance Data: Sustainable bond issuance allocation analysis, www.environmental-finance.com/content/downloads/ef-data-sustainable-bond-issuance-allocation-analysis.html.

Sustainability-linked bonds

Sustainability-linked bonds (SLBs) differ from UoP bonds in that their proceeds are not earmarked for specific projects. Instead, the financial terms of the bond (typically the coupon rate) are linked to the issuer's performance against predefined sustainability performance targets (SPTs), measured through key performance indicators (KPIs) (Box 3.13) (ICMA, 2024^[123]). Because proceeds are not tied to specific projects, SLBs can shift attention from inputs to ecological outcomes, strengthening issuer focus on baselines, monitoring and verification across the bond's lifetime (OECD, 2025^[147]). In principle, coupon

step-ups for under-performance and step-downs for over-achievement create incentives to embed sustainability, including biodiversity, into overall strategies rather than discrete projects.

Box 3.13 KPIs for biodiversity in SLBs

The ICMA Sustainability-Linked Bonds Principles recommend that KPIs should be:

- Relevant, core and material to the issuer's overall business, and of high strategic significance to the issuer's current and/or future operations;
- Measurable or quantifiable on a consistent methodological basis;
- Externally verifiable; and
- Able to be benchmarked, i.e. as much as possible using an external reference or definitions to facilitate the assessment of the SPT's level of ambition.

The ICMA provides an illustrative KPI registry to provide guidance on how to structure SLBs. The registry covers various sustainability themes. Under the theme of biodiversity (including soil and land-use), examples of KPIs include:

- Area of land with a permanently protected land status
- Reduction in chemical use (e.g. fertiliser and pesticide) and animal manure fertilisers
- Percentage of deforestation-free certified commodities
- Share of total managed forest area where "close-to-nature" or "continuous cover" forestry approaches are implemented.

Source: (ICMA, 2025^[148]), Illustrative KPIs Registry, www.icmagroup.org/assets/documents/Sustainable-finance/2025-updates/Illustrative-KPIs-Registry.xlsx; (ICMA, 2024^[123]), Sustainability-Linked Bond Principles Voluntary Process Guidelines, www.icmagroup.org/assets/documents/Sustainable-finance/2024-updates/Sustainability-Linked-Bond-Principles-June-2024.pdf, Illustrative KPIs Registry, www.icmagroup.org/assets/documents/Sustainable-finance/2025-updates/Illustrative-KPIs-Registry.xlsx; (ICMA, 2024^[123]), Sustainability-Linked Bond Principles Voluntary Process Guidelines.

SLBs therefore offer broad market access while allowing flexibility, as proceeds can be used for general issuer purposes and are not constrained by a defined project pipeline. This flexibility may support iterative transition planning (OECD, 2025^[147]), enabling corporates and sovereigns to align financial strategies with the KMGBF and NBSAPs. Entity-wide commitments to quantifiable biodiversity targets and KPIs could create a credible market signal of intent, catalysing investor engagement (OECD, 2023^[149]). Typical issuance sizes range from USD 100 million to USD 3 billion (WEF, 2025^[127]).

The SLB market remains underdeveloped. Corporate SLBs were first issued in 2019, with annual issuances peaking at USD 115 billion in 2021 before declining to USD 34 billion in 2024 (OECD, 2025^[129]). The number of SLB issuers has remained broadly stable over this period, with some exiting the market and new ones joining (Lester, 2024^[150]). Sovereign and supranational SLBs were first issued in 2022 and issuance remains modest compared to corporate SLBs (OECD, 2025^[129]). While some SLBs with biodiversity (or broader nature) KPIs exist (Box 3.14), there is no reliable estimate of the total number of SLBs with biodiversity KPIs (WEF, 2025^[127]).

The slow growth of the SLB market has raised concern among issuers and may partly stem from credibility challenges (Lester, 2024^[151]; Lester, 2024^[150]). Analysis indicates that SLBs have generally been of lower quality than traditional use-of-proceeds (UoP) bonds (Lester, 2024^[151]; Almeida, 2024^[152]). A central challenge lies in the design of KPIs and targets – when these are vague, unambitious, based on weak baselines, or lack external verification, the link to environmental impact becomes tenuous and greenwashing risks increase (de Grefte and de Bruin, 2025^[153]; Vörösmarty et al., 2018^[154]; ICMA, 2024^[123]). Reliance on a single KPI rather than multiple material KPIs can undermine the credibility of

transition pathways. These issues are particularly acute for biodiversity, given ecological complexity and data and monitoring constraints (Sustainable Fitch, 2023^[155]).

A second challenge relates to incentive mechanisms. Coupon step-up or step-down¹⁸ mechanisms are often modest (e.g. 25 basis points), and in many cases, performance assessments occur late in the bond's term, reducing behavioural incentives (Federated Hermes, 2022^[156]; Lefournier, 2023^[157]). Furthermore, because the flat rate of 25bps does not consider the scale of a business, the materiality of this rate as an incentive is inconsistent across companies and thus undermines credibility of the market (Federated Hermes, 2022^[156]). As SLBs approach their KPI observation dates, many face limited financial incentive for issuers, heightened investor risk and potential for price volatility unless the bond's step-up/step-down mechanism is sufficiently material and well-aligned with issuer sustainability performance (Richardson, Mielnik and Jarnmo, 2022^[158]).

Two limitations are particularly relevant for biodiversity. First, SLBs typically have short maturities, often around five years, making it difficult to link financing to long-term biodiversity outcomes that often require a decade or more to materialise (CapitalMonitor, 2022^[159]). This maturity mismatch is a structural constraint that cannot easily be resolved through instrument design alone; it points to the need for complementary long-term financing mechanisms, such as public conservation expenditure or outcome-based structures, to support the multi-decade investments that meaningful biodiversity recovery typically requires. Second, KPIs in practice tend to prioritise reducing negative impacts rather than delivering measurable biodiversity gains, reflecting corporate emphasis on risk management (CapitalMonitor, 2022^[159]). This reinforces the need for multiple, material and ambitious KPIs clearly linked to targets, and complementary finance instruments to finance project-level biodiversity gains.

For SLBs, external review focuses on the credibility and ambition of KPIs, baselines and targets rather than project eligibility. While this scrutiny can strengthen market confidence, as with UoP bonds, the issuer-appointed nature of assurance providers raises potential conflicts of interest, highlighting the importance of independence and transparent governance.

Overall, market sentiment toward SLBs remains mixed, but opportunities for scaling exist. Achieving impact and market growth will require credible, comparable KPIs and cost-effective monitoring frameworks (De Quinsonas, 2020^[160]). To realise their potential, issuers, investors and standard setters must raise ambition, improve calibration and transparency, and use SLBs as genuine transition instruments (Almeida, 2024^[152]).

Box 3.14. Sustainability-linked bonds incorporating biodiversity-related KPIs

Corporate

Klabin, Brazil: In 2021, the Brazilian pulp and paper company issued a USD 500 million SLB with a ten-year maturity and 3.2% yield. Structured under Klabin's SLB Framework, which Sustainalytics confirmed aligns with SLB Principles, the targets and KPIs are:

- Reintroduction and population reinforcement of wild species: Reintroduce two species proven locally extinct and promote population reinforcement of four more threatened species. Coupon payment increases 6.25 basis points (bp) if target is not met.
- Water consumption intensity: Water consumption equal to or below 3.68m³ per tonne of production, representing a reduction of 16.7% over 2018. Coupon payment increases 12.5 bp if target is not met.
- Water reuse and recycling: Water waste Reuse and Recycling target equal to or greater than 97.5%, calculated as percentage of waste reuse and recycling for 2025, equivalent to an estimated increase in reuse of 3.2%.

Sovereign

Chile: In 2025, Chile's Ministry of Finance updated its Sovereign SLB Framework to include a biodiversity focus. The KPI is focused on biodiversity and comprises two sub-indicators: 1) the percentage of national terrestrial area designated as protected areas or Other Effective Area-Based Conservation Measures, targeting at least 30% by 2030; and 2) the percentage of those areas meeting key effectiveness criteria on governance, planning, personnel and monitoring, covering at least 10% of national territory by 2030. These indicators are aligned with the KMGBF "30×30" target and demonstrate Chile's intention to link debt performance directly to biodiversity outcomes. The updated framework maintains a coupon adjustment mechanism – allowing both step-ups for under-performance and step-downs for over-achievement – thus financially rewarding biodiversity benefits alongside climate ambition.

Uruguay: In 2022, Uruguay published its Sovereign SLB Framework, becoming the first country to issue a sovereign SLB explicitly tied to both climate and biodiversity outcomes. The USD 1.5 billion bond (reopened in 2023 for a further USD 700 million) was arranged with support from the Inter-American Development Bank and underwritten by BNP Paribas. With a 5.75% coupon, it links borrowing costs to two KPIs: 1) reducing GHG emissions intensity and 2) conserving and expanding native forests. The performance period runs to 2025, with SPTs of maintaining 100% of the 2012 baseline of native forest cover and achieving up to a 3% increase. A symmetric coupon adjustment of ±15 bps rewards overperformance or penalises underperformance, embedding biodiversity outcomes directly into fiscal policy.

Source: (Cano, 2024^[161]), State of the SLBs Market in Latin America, <https://www.iboardsem.com/post/state-of-the-slbs-market-in-latin-america>; (Chile Ministry of Finance, 2025^[162]), Ministry of Finance updates its Sustainability-Linked Bond Framework, <https://www.hacienda.cl/english/news-and-events/news/ministry-of-finance-updates-its-sustainability-linked-bond-framework>; (Morningstar Sustainalytics, 2025^[163]), Second Party Opinion: Klabin Sustainability-Linked Bond Framework Second-Party Opinion; (Uruguay, 2023^[164]), Uruguay's Sovereign Sustainability-Linked Bond (SSLB) Framework: For Sustainability-Linked Bonds Focused on Climate and Nature-Based Targets; (Uruguay, 2024^[165]), Uruguay's Sovereign Sustainability-Linked Bond Annual Report.

Environmental impact bonds and other outcome-based instruments

Environmental impact bonds (EIBs) are pay-for-success or outcome-based investment instruments that adapt the model of social and development impact bonds to environmental outcomes (NAP Global Network, 2024^[166]; Thompson, 2022^[167]). When focused on biodiversity outcomes, they are sometimes referred to as conservation impact bonds. While their structure resembles that of green bonds, the key distinction lies in repayment: green bonds are typically serviced from the issuer's general revenues, whereas EIBs link investor returns directly to the verified performance of the environmental project (Brand et al., 2021^[168]).

Although outcome-based instruments vary widely in design (Box 3.15), classical EIBs involve four key actors: investors, project implementers, project developers and outcome payers. Investors provide upfront capital to finance interventions; an independent evaluator verifies outcomes; and outcome payers – often governments, donors, philanthropic foundations, or direct beneficiaries such as property owners benefiting from reduced flood risk – repay investors based on the results achieved (Government Outcomes Lab, 2025^[169]). Depending on the structure, investors may lose part or all their principal if outcomes are not met or received reduced returns.

More recent structures have expanded beyond the classical pay-for-success model by linking returns to revenues generated through carbon or ecosystem-service markets rather than relying solely on pre-committed public or philanthropic outcome payers. In these market-linked approaches, investor returns remain contingent on verified environmental outcomes but are financed primarily through revenues from carbon credits or similar ecosystem-service markets. For example, the World Bank's USD 120 million Spekboom Restoration Outcome Bond launched in 2026 links variable investor returns to carbon revenues generated through large-scale ecosystem restoration activities in South Africa. Investors accept a below-market fixed coupon, with the forgone portion used to finance the restoration project and they may earn additional returns linked to revenues from carbon credits if project performance meets expectations (World Bank Group, 2026^[170]).

The main strength of impact bonds lies in their capacity to align financial performance with biodiversity outcomes, thereby mobilising private capital while enhancing accountability (Thompson, 2022^[167]). However, their uptake remains limited which may be due to their novelty, high structuring costs, complexity and investor risk. Outcome-linked bonds with guaranteed principal, such as the Wildlife Conservation Bond, can mitigate investor risk but require significant credit backing from public funds or highly rated issuers. To date, participation has been concentrated among philanthropic organisations, impact investors, development finance institutions and large financial intermediaries, with limited participation from institutional investors due to the small number, scale and track record of existing instruments (Thompson, 2022^[167]).¹⁹ Nonetheless, there is growing experimentation and innovation with outcome-based structures across biodiversity and broader nature themes, including early engagement from institutional investors.

The credibility of these approaches depends on robust theories of change, clear and measurable indicators, and independent verification of outcomes. As experience grows, transaction and monitoring costs may decline. Greater standardisation of EIB design, implementation and evaluation could enhance efficiency (Brand et al., 2021^[168]). However, it will be necessary to allow for flexibility to reflect differing environmental objectives. For example, a project financing nature-based solutions for flood protection or carbon sequestration may take a different model than one used to finance wildlife conservation. Stacking multiple ecosystem benefits – and engaging multiple outcome payers who benefit from those services – could support broader adoption (Brand et al., 2021^[168]).

Box 3.15. Environmental impact bonds and outcome-based instruments – examples

Classical EIBs

Atlanta EIB: The Atlanta Environmental Impact Bond (EIB) is a USD 14 million instrument designed by Quantified Ventures to finance green infrastructure improvements in the Proctor Creek watershed. The project aims to reduce stormwater runoff, improve water quality and lower flood risk. The City of Atlanta acts as the outcome payer, repaying investors based on verified project performance. Investor returns vary between 3.6% and 4.7% depending on outcomes achieved. While biodiversity impacts are indirect, the instrument illustrates a classical EIB structure involving a public outcome payer and performance-based returns.

Deshkan Zibi Conservation Impact Bond (DZCIB), Canada: DZCIB is Canada's first conservation impact bond with an outcome-based approach. Launched as a 60-hectare pilot in Ontario's Carolinian Zone, it adapts the social impact bond model, emphasising Indigenous leadership and community-driven conservation. VERGE capital provided CAD 130 000 (USD 97 000) in upfront financing, while outcome payers from government, non-profit and private sectors repay investors only if independently verified outcomes are achieved. These include habitat connectivity, species recovery and expansion of Indigenous stewardship activities. The pilot demonstrates the applicability of outcome-based biodiversity financing approaches at community scale.

Outcome-based structures with principal protection

Wildlife Conservation Bond (Rhino Bond), South Africa: In 2022, the World Bank issued the USD 150 million Wildlife Conservation Bond (WCB), a five-year sustainable development bond with outcome-linked features. The coupon payments of about USD 10 million go to two South African national parks to fund black rhino conservation, rather than to the investor. Investors receive full principal at maturity in 2027 and may earn a "conservation success payment" from the GEF if rhino population targets are met. Early results indicate positive rhino growth.

Market-linked outcome-based structures

Outcome Bond Partnership for the Amazon Basin: In 2025, Everland and BNP Paribas launched a USD 50 million outcome-based financing partnership to support Indigenous-led forest conservation projects across the Amazon Basin. The initiative aims to protect large areas of tropical forest and generate high-integrity carbon credits under the Equitable Earth Standard, which emphasises Indigenous governance, equitable benefit-sharing and verified ecological performance. The structure combines upfront private capital with an outcome-linked financing approach in which investor returns depend on verified conservation outcomes, including avoided deforestation and associated carbon credit generation.

Source: (Adamkiewicz, 2024^[171]), Impact investors helping the black rhino make a comeback; (Balfour et al., 2019^[172]), A Theory of Change to grow numbers of African rhino at a conservation site; (Barichievy et al., 2021^[173]), A demographic model to support an impact financing mechanism for black rhino metapopulations; (Deshkan Zibi Conservation Impact Bond Leadership Team, 2021^[174]), The Deshkan Zibi Conservation Impact Bond Project; 10.5206/101121ipib; (Everland, 2025^[175]), Everland in partnership with BNP Paribas announces USD 50 million capital markets initiative to launch first Indigenous-led Amazon forest conservation projects under Equitable Earth Standard. Everland News & Press Releases; (Grant, 2025^[176]), The Amazon's New Frontier: How Everland and BNP Paribas Are Banking on Indigenous Stewardship to Save the Planet; (Green Finance Institute, 2025^[177]), The Rhino Bond, '[The Rhino Bond](#)'; (Jeffries et al., 2019^[178]), The Rhino Impact Investment Project <https://doi.org/10.69649/pachyderm.v60i.38>; (Medina and Scales, 2023^[179]), Finance and Biodiversity Conservation 10.1017/s0030605322001648; (Quantified Ventures, 2025^[180]), Atlanta: First Publicly Offered Environmental Impact Bond.

Privately issued, bespoke biodiversity bonds

Other bond mechanisms have emerged as innovative financing approaches outside formal capital markets that do not squarely fit within the categories above. These include charity bonds, conservation notes, crowdfunded bonds and other small-scale debt securities tailored to specific biodiversity projects. Like conventional debt instruments they are typically issued to multiple investors with a fixed maturity and interest rate. However, they tend not to be labelled or listed on financial exchanges. They are distinct from but may resemble and overlap with UoP or impact bonds.

Investors typically include retail investors, philanthropic capital or mission-driven lenders, with credibility resting on the reputation of the issuing organisation and the visibility of the underlying project rather than on external verification or taxonomy alignment. These instruments play a catalytic role in financing early-stage or place-based conservation initiatives that are too small, complex or novel for institutional bond markets (Box 3.16).

Taken together, these instruments illustrate a spectrum of financing approaches characterised by relatively direct links to biodiversity outcomes but limited scale and liquidity. While they can support innovative business models and broaden the investor base, they remain dependent on project-level revenues and bespoke structuring, which can constrain scalability compared to mainstream capital market instruments.

Box 3.16. Alternative bond mechanisms – case studies

Conservation Notes – Althelia Ecosphere and Credit Suisse: In 2014–15, Althelia Ecosphere partnered with Credit Suisse to launch Nature Conservation Notes, enabling private banking clients to invest in forest conservation and sustainable land-use projects. Approximately EUR 15 million was raised from around 50 high-net-worth investors through a Credit-Suisse-sponsored special purpose vehicle, with proceeds channelled to the Althelia Climate Fund. Investments supported sustainable agroforestry, biodiversity protection, and zero-deforestation supply chains in Latin America and Southeast Asia, generating revenues from sustainable agriculture, carbon credits, and certified commodities. The Notes represent an early example of privately structured debt instruments mobilising private capital for conservation outside traditional public or grant-based financing channels. The instrument was privately placed and not actively traded, reflecting its bespoke structure and limited investor base.

Crowdfunded Bonds – Trees for Life and Triodos Bank UK: In 2023, the Scottish charity Trees for Life raised GBP 2 million through a crowdfunded, unsecured bond issued via Triodos Bank UK to finance the Dundreggan Rewilding Centre. Structured as a nine-year instrument, the bond allowed investors to choose a 0%, 3%, or 6% annual coupon, with a minimum investment of GBP 50. Although not labelled, taxonomy-aligned, or traded on capital markets, proceeds were earmarked for a place-based restoration project, with revenues expected from ecotourism, education, and potentially carbon credits. While sometimes described as a bond, the instrument is not listed and is typically held to maturity by retail investors. This case illustrates the emergence of small-scale, unsecured conservation bonds that mobilise retail investors and test nature-based business models outside formal capital markets.

Source: (Althelia Ecosphere, 2015^[181]), Althelia ecosphere Sustainable Land Use Fund. Submission to UNFCCC Standing Committee on Finance; (Environmental Finance, 2015^[182]), Sustainable Forestry: Credit Suisse/Althelia Ecosphere's Nature Conservation Notes :: Environmental Finance; (Triodos Bank, 2025^[183]), Loans for nature-based projects | Triodos Bank; (Triodos Bank, 2021^[184]), Rewilding the Scottish Highlands, Rewilding the Scottish Highlands | Triodos Bank.

Biodiversity Loans and Private Credit

Loans are a form of debt finance in which capital is provided by a lender and repaid over time with interest. They can be structured on either concessional terms (e.g. below-market interest rates, longer tenors or grace periods) or non-concessional, market-based terms. Compared with bonds, loans offer greater flexibility in size, structure and risk allocation, and do not require the same level of scale, credit rating or market access. This makes loans accessible to smaller companies, landowners, project developers and early-stage business models. Loans are generally provided by development finance institutions (DFIs), commercial banks or private lenders, and can support a wide range of activities, including land acquisition, restoration, transition investments and working capital for nature-based enterprises (Center for Global Commons, 2023^[185]). This flexibility makes them well suited to biodiversity-related investments, which often operate at smaller scales, have longer return horizons and lack proven revenue streams or investment track records. However, their deployment remains constrained by revenue uncertainty, perceived risk and limited availability of collateral.

Financial institutions are increasingly integrating biodiversity considerations into lending decisions, recognising material financial risks associated with biodiversity loss in sectors such as agriculture, forestry, extractives and infrastructure (Becker, Di Girolamo and Rho, 2023^[186]; NGFS-INSPIRE, 2022^[187]; TNFD, 2023^[188]). Some banks, DFIs and private credit providers are incorporating nature-related risks into credit underwriting, sectoral due diligence and portfolio-level assessments, supported by emerging biodiversity screening tools and sector-specific metrics. However, uptake remains uneven and at an early-stage across the sector, with limited evidence of systematic integration across lending portfolios.

In addition to conventional (non-labelled) loans, which remain the dominant form of lending and are increasingly incorporating biodiversity considerations through risk management and due diligence, biodiversity-related lending also spans several structured approaches. These include, for example:

- Use-of-Proceeds (UoP) loans, like UoP bonds, where capital is ring-fenced for biodiversity or nature-based solutions (NbS) activities, though typically with less standardised reporting and verification than in bond markets;
- Sustainability-Linked Loans (SLLs), where interest margins are linked to biodiversity KPIs or transition targets, like SLB bonds (APLMA, LMA, LSTA, 2025^[189]); and
- Project-based or revenue-linked loans, where repayment depends directly on ecosystem service revenues (e.g. biodiversity credits, carbon markets, water payments), although such models remain emerging and subject to market and regulatory uncertainty.

Private credit – the provision of loans by non-bank institutional investors, typically through pooled investment vehicles such as private debt funds – is becoming an increasingly important component of sustainable finance (Lin, Sharpe and Girard, 2022^[190]; Prequin, 2023^[191]). Positioned between traditional bank lending and capital markets, private credit can offer longer investment horizons and more flexible structuring. Impact investors, specialist natural capital funds and private debt managers are beginning to offer longer-term bespoke lending structures for restoration, conservation and regenerative land management. These structures are often combined with blended finance or impact-oriented investment mandates. As biodiversity projects progress from grant dependence to investment readiness, loans and private credit can act as a critical bridge mobilising early-stage capital, potentially paving the way for access to bond markets and institutional investment at scale (Denke et al., 2023^[120]).

Box 3.17. Examples of biodiversity-related lending and private credit: Spanning corporate lending, asset-backed finance and project-level investments

BNP Paribas: In 2024, BNP Paribas Bank Polska partnered with McCain Foods to implement a regenerative agriculture financing programme in Poland, supporting the company's target of sourcing 100% of its potatoes from regenerative systems by 2030. The programme provides farmers with discounted loans, cash advances and technical support to adopt practices such as crop rotation, cover cropping and reduced synthetic inputs. These measures are expected to enhance soil biodiversity, improve ecosystem resilience and reduce environmental pressures at farm level. By linking concessional finance to supply-chain commitments, the initiative illustrates how commercial banks can mobilise biodiversity-relevant lending at scale while supporting the transition of primary producers.

Danske Bank, OP Corporate Bank and SEB: Tornator, a Finnish forestry company managing over 780 000 hectares in Finland, Estonia and Romania, has developed a Green Finance Framework rated “dark green” by CICERO. Under this framework, Tornator secured major green loan facilities arranged by Danske Bank, OP Corporate Bank and SEB, including a EUR 350 million syndicated loan in 2020 and EUR 450 million in 2025 to refinance debt and maintain investment capacity for sustainable forestry. These term loans and revolving credit lines are backed by FSC and PEFC-certified forest assets. Although corporate-level, proceeds are allocated to responsible forest management, biodiversity conservation and climate resilience.

Sienna Investment Managers: In 2024, Paris-based Sienna Investment Managers launched Europe's first Article 9 SFDR-classified private credit fund dedicated to biodiversity, targeting EUR 200 million with Malakoff Humanis as anchor investor. The fund provides sustainability-linked loans to companies in sectors such as agribusiness and real estate, incentivising biodiversity improvements through interest rate reductions tied to milestones like organic certification and regenerative practices. Impact is monitored through bespoke biodiversity indicators, and borrowers receive technical support from specialists. With a diverse investor base and cross-sectoral portfolio, the fund demonstrates how private credit can scale biodiversity finance while supporting SMEs.

Triodos Bank: In 2024, Triodos Bank UK granted a GBP 3.85 million loan to Avon Needs Trees to acquire over 170 hectares for Lower Chew Forest, in Southwest England. The site will host ~100 000 native trees, wetlands, hedgerows, and species-rich grasslands to restore biodiversity, sequester carbon and reduce flood risk. Repayment is linked to future sales of Biodiversity Net Gain units, supplemented by eco-tourism and agroforestry revenues. Early lessons suggest that subsidies, regulatory clarity and price signals remain crucial to de-risk nature-based lending and help bridge the gap until natural capital markets mature.

Source: (Alternative Credit Investor, 2024^[192]), [Sienna IM launches European biodiversity private debt impact fund - Alternative Credit Investor](#); (BNP Paribas, 2024^[193]), BNP Paribas développe des solutions pour accompagner la transition du secteur agroalimentaire ; (Forrest, 2025^[194]), Sienna IM provides €2m SLL from first debt impact biodiversity fund (Higgins, 2024^[195]), Triodos Bank announces first BNG private sector loan; (McCain, 2024^[196]), McCain Foods with the support of BNP Paribas Bank Polska, launches a unique regenerative agriculture program in Poland, [McCain Foods BNP Paribas Bank Polska Poland](#); (Scholl, 2025^[197]), Case Study - Financing based on Biodiversity Net Gain Market, [OECD Biodiversity workshop, May 2025, Simon Scholl | PDF](#); (Siirtola, 2020^[198]), Tornator acquires EUR 350 million in green bank loan funding – Tornator; (Tornator, 2019^[199]), Green Finance Framework; (Tornator Oyj, 2025^[200]), Tornator secures €450 million bank loan financing.

Summary and comparison of debt instruments for biodiversity

Across debt instruments, a trade-off emerges between scalability and outcome alignment. Instruments that are well integrated into mainstream capital markets typically offer the greatest near-term potential to mobilise large volumes of capital but remain only weakly linked to verified biodiversity outcomes. Conversely, instruments more directly tied to ecological performance are better aligned with biodiversity objectives but face greater constraints related to scale, standardisation and cost.

The overall volume of biodiversity finance mobilised through debt instruments remains small relative to broader green and climate-aligned markets. This reflects the greater complexity of defining and measuring biodiversity outcomes, challenges in developing revenue-generating projects, and the relatively recent emergence of relevant standards. More fundamentally, green bond and loan markets have expanded in response to strong policy signals, including carbon pricing and renewable energy mandates, that have generated large pipelines of bankable projects with predictable cash flows (Tolliver, Keeley and Managi, 2020^[201]; Demski et al., 2025^[202]). Comparable conditions remain less developed for biodiversity.

Within this landscape, instruments occupy distinct but complementary roles. UoP bonds are the most established instrument and offer the strongest near-term scaling potential, given their alignment with existing market structures and investor expectations. SLBs complement UoP bonds by supporting entity-wide transition strategies; however, their effectiveness depends critically on the ambition, credibility and governance of biodiversity-related KPIs. These weaknesses have constrained market growth and credibility. Environmental impact bonds are conceptually well aligned with biodiversity outcomes through their pay-for-success model but remain limited in uptake due to high transaction costs, outcome-measurement complexity and standardisation challenges. More recent market-linked outcome bond models may provide further opportunity for scaling. Alternative instruments, such as conservation notes and crowdfunded bonds, offer smaller-scale and more inclusive financing options but are unlikely to reach capital market scale.

Among loan-based instruments, conventional and sustainability-linked loans offer the greatest short-term mobilisation potential, given their integration within mainstream banking and their flexibility across borrower types, sizes and sectors. This makes them well suited to the fragmented and heterogeneous nature of biodiversity investments. More specialised structures, such as revenue-linked loans and conservation-focused lending, are more directly outcome-aligned but remain constrained by limited track records and the early stage of ecosystem service revenue markets. Private credit plays a distinct and complementary role, offering longer investment horizons, greater structuring flexibility and the ability to aggregate smaller projects into investable portfolios. This makes it particularly relevant for bridging the gap between grant-dependent initiatives and revenue-generating enterprises ready for mainstream capital markets.

Across all instruments, integrity will be critical to realising their potential. For UoP instruments, this entails stronger eligibility definitions, more granular reporting and the progressive integration of outcome metrics. For sustainability-linked instruments, it requires ambitious, science-based KPIs with material financial consequences. For outcome-based structures, it necessitates robust and independently verified measurement frameworks. In many cases, concessional capital, guarantees or technical assistance will remain necessary to crowd in commercial finance. This underscores that debt instruments, however well designed, operate within and depend on broader enabling conditions discussed in the good practices below.

Table 3.2. Comparative analysis of debt instruments for biodiversity

Instruments	Use of proceeds	Performance-linked	Market maturity	Strengths	Limitations	Integrity risks
UoP bonds (green and sustainability bonds)	Yes	No	Established (general) / developing (biodiversity-specific)	Large-scale capital mobilisation Access to deep capital markets Clear “use of proceeds” structure	Limited flexibility once issued Focus on inputs (projects), not outcomes Pipeline constraints	Weak project definitions Limited biodiversity-specific criteria Inadequate impact measurement/reporting
Sustainability-linked bond	No	Yes	Established (general) / nascent (biodiversity-specific)	Drives whole-of-company transition Flexible use of funds Scalable via capital markets	No guaranteed allocation to green activities Outcomes depend heavily on KPI quality Incentive structures often too weak to shift behaviour	Low-ambition or non-material KPIs Inadequate verification Greenwashing through symbolic targets
EIB and other outcome bonds	Can be	Yes (outcome-based)	Nascent	Strong focus on measurable outcomes Aligns incentives across actors Encourages innovation	Complex and can be costly to structure Limited standardisation and scalability	Poorly designed outcome metrics Measurement uncertainty
Conservation notes/bespoke conservation instruments	Yes	Sometimes	Nascent	Dedicated to conservation finance Can aggregate projects Compatible with blended finance	Lack of standardisation Often small and illiquid Issuer capacity constraints	Weak credit structures Limited disclosure Unclear or inconsistent impact reporting
Green loans	Yes (restricted)	No	Established (general) / nascent (biodiversity-specific)	Flexible and tailored Accessible to corporates/SMEs Faster to deploy than bonds	Smaller scale than bonds Limited transparency	Inconsistent standards Weak monitoring of use of proceeds Risk of “light green” lending
Sustainability-linked loan	No	Yes	Established (general) / nascent (biodiversity-specific)	Highly flexible Can include rewards + penalties Suitable for range of borrowers	Limited transparency KPI negotiation may be weak Fragmented market practices	KPI credibility and ambition Inadequate verification Risk of “box-ticking” sustainability

Note: Conventional corporate bonds and unlabelled lending represent most capital flows and may finance biodiversity-related investments; however, they are not included, as they are not explicitly linked to environmental objectives. The maturity scale comprises nascent, developing, and established categories.

Good practices for mobilising finance for biodiversity through debt instruments

Many biodiversity financing instruments face common structural challenges linked to the characteristics of biodiversity itself, notably difficulties in defining projects, measuring outcomes, and developing scalable investment pipelines. Some instruments are better able to accommodate these constraints. For example, private loans and other flexible, relationship-based forms of finance can adapt more readily to project-specific conditions than standardised instruments such as green bonds. However, this flexibility often comes at the expense of scale, as such instruments typically lack the standardisation and market depth required to mobilise large volumes of capital. Addressing these underlying structural challenges will therefore be critical to achieving scale in biodiversity finance (see chapter 4).

In addition to these shared constraints, individual instruments present specific risks and integrity challenges. For green bonds and loans, key issues include ensuring robust project definitions, avoiding overly broad eligibility criteria, strengthening the use of outcome-based metrics, and improving transparency and reporting on both the use of proceeds and realised biodiversity impacts. For sustainability-linked instruments, the main challenge lies in ensuring that key performance indicators are sufficiently ambitious, science-based and clearly linked to biodiversity outcomes, with meaningful financial consequences if targets are not met. Outcome-based instruments, such as environmental impact bonds, face challenges related to the design, measurement and verification of results, as well as higher transaction costs and limited scalability. Taken together, these considerations highlight that while a growing range of financial instruments can support biodiversity objectives, improving their integrity and effectiveness will be essential to delivering measurable outcomes at scale. Key opportunities for scaling up the use and effectiveness of debt instruments for biodiversity include:

Cross-cutting priorities for biodiversity-aligned debt

- **Establish clear and operable standards and taxonomies:** Governments should strengthen biodiversity-specific definitions of eligible activities and outcomes to reduce ambiguity, improve comparability and support market integrity.
- **Strengthen measurement, disclosure and assurance:** Invest in credible, decision-useful biodiversity metrics and monitoring frameworks, supported by independent verification. Clear expectations for assurance providers – on independence, governance and conflicts of interest – are essential, while requirements should remain proportionate to data availability and costs.
- **Prioritise project pipeline development and aggregation:** Public support for project preparation, technical assistance and aggregation platforms is critical to move from pilot projects to investable portfolios and scale biodiversity finance.
- **Align policy signals and enabling environments:** Debt instruments cannot substitute for coherent biodiversity policy. Governments should align biodiversity targets, sectoral regulations and incentives, including subsidy reform and payments for ecosystem services, to support bankable projects and more predictable revenue streams.
- **Use public finance and risk-sharing strategically:** Guarantees, concessional capital and blended finance should be deployed selectively to address market failures and crowd in private investment, with clear additionality and regular evaluation.
- **Demonstrate public sector leadership:** Sovereign and supranational issuers should integrate biodiversity and nature-based solutions explicitly into green, sustainable and sustainability-linked bond and loan frameworks to provide market signalling and support pipeline development.

UoP bonds and loans

- **Strengthen eligibility criteria and safeguards:** Align eligible activities with taxonomies and national priorities, with safeguards to avoid biodiversity harm or displacement. Clearly disclose the balance between new financing and refinancing.

- **Enhance transparency and outcome reporting:** Provide consistent, comparable reporting on allocations and implementation. Progressively incorporate biodiversity outcome indicators to better link capital allocation to ecological impacts, recognising trade-offs between precision, cost and scalability.

Sustainability-linked bonds and loans

- **Ensure ambitious, science-based and material KPIs:** KPIs should reflect material biodiversity dependencies and impacts, be underpinned by clear baselines and consistent methodologies, and align with the KMGBF and national biodiversity strategies. Weak or unambitious targets undermine credibility and investor confidence.
- **Design incentive structures that influence behaviour:** Step-up or step-down features should be sufficiently material and timely to change issuer behaviour. Weak financial consequences reduce SLBs to *de facto* conventional debt and undermine the instrument's rationale.

Impact bonds and alternative debt channels

- **Support piloting and innovation:** Given high structuring costs and limited track records, public and philanthropic actors have a critical role in piloting impact bonds, building evidence bases and enabling replication. Stacking multiple ecosystem service revenues and engaging multiple outcome payers can improve financial viability and support broader adoption.

3.2.2. Equity and investment funds with a biodiversity focus

Equity finance, deployed through public equity markets and private markets, can mobilise capital for biodiversity both by influencing the behaviour of firms operating in biodiversity-relevant sectors and by providing risk-tolerant capital to businesses developing nature-positive products and services. Equity investment involves taking an ownership stake in a company or asset, with returns linked to future profitability, dividends and valuation, rather than fixed repayments. It may involve both primary capital provision and secondary market transactions. Unlike debt instruments tied to specific activities or project cash flows, equity investors hold long-term stakes in companies and therefore influence strategy, governance and capital allocation. As biodiversity loss becomes recognised as a potential source of systemic financial risk – and biodiversity solutions as a growing investment opportunity – equity investors are increasingly expected to play a central role in steering companies towards business models aligned with global biodiversity goals (KPMG, 2023^[203]) (OECD, 2021^[204]).

In the context of biodiversity, equity finance plays two principal roles. First, it can support the transition of existing firms, particularly in sectors with significant biodiversity dependencies and impacts, by integrating biodiversity considerations into governance, risk management and investment decisions. Second, it can provide risk-tolerant capital for early-stage and innovative business models, including nature-based and nature-tech solutions.

Market development and constraints

Evidence suggests that biodiversity-related exposures are beginning to influence equity pricing and investment strategies, although effects remain limited (Garel et al., 2024^[205]) (Giglio et al., 2023^[206]). At the same time, biodiversity-themed investment products have expanded, despite persistent definitional ambiguities and measurement challenges that cast doubt on their ecological additionality and impact (Christiansen et al., 2025^[145]). Morningstar estimated that biodiversity-themed open-ended and exchange-traded equity funds managed USD 3.7 billion in assets in 2024 – double the level three years earlier (Bioy and Pucci, 2024^[207]). Separately, MSCI identified 24 “pure-play”²⁰ biodiversity equity funds active in 2024, primarily focused on publicly listed companies, with combined assets under management of USD 1.6 billion (Gangadia, 2024^[208]).

Despite this growth, the market remains small and heterogeneous, with significant variation in ambition and approach. Many funds appear to prioritise the management of biodiversity-related financial risks, with more limited evidence of measurable ecological outcomes. Around 68% of the biodiversity-themed funds tracked by Morningstar fall under Article 8 under the EU Sustainable Finance Disclosure Regulation (SFDR),²¹ indicating a focus on promoting environmental characteristics rather than delivering explicit positive impacts (Bioy and Pucci, 2024^[207]). A higher share – but not all – of the pure-play biodiversity funds identified by MSCI fall under Article 9 (54%) compared to Article 8 (42%), signalling stronger commitments to sustainability objectives (Gangadia, 2024^[208]).

Overall, these trends highlight both growing market momentum and persistent constraints, including unclear definitions, inconsistent methodologies and limited availability of robust biodiversity metrics. As a result, while equity markets are increasingly incorporating biodiversity considerations, their contribution to measurable biodiversity outcomes remains uncertain.

Listed equity (mainstream public equity) and investment funds

Public equity refers to ownership stakes in publicly listed companies whose shares are traded on stock exchanges. Listed equity markets provide broad exposure to sectors with material biodiversity dependencies and impacts, including agriculture, forestry, extractives and infrastructure. Investors influence corporate behaviour primarily through capital allocation decisions, investor engagement and voting, supported by stewardship frameworks and evolving regulatory initiatives.

Voluntary and regulatory frameworks are improving transparency around biodiversity risks and dependencies. Voluntary frameworks such as the TNFD's LEAP approach support investors in identifying exposure to high-risk geographies, supply-chain impacts and ecosystem dependencies. Regulatory initiatives, including the EU Corporate Sustainability Reporting Directive and the European Sustainability Reporting Standards, enhance the availability and consistency of corporate-level disclosures on nature-related impacts and dependencies, while the EU Sustainable Finance Disclosure Regulation governs sustainability disclosures by financial market participants. Together, these frameworks can improve the quality of information available for investment decision-making, although important data gaps and uncertainties remain, particularly with respect to biodiversity outcomes and location-specific impacts.

Stewardship is considered a critical lever for sustainability in public equity, though its impact is difficult to quantify (AFM, 2025^[209]) (OECD, 2025^[210]). Shareholder rights, anchored in governance principles such as the G20/OECD Principles of Corporate Governance (OECD, 2023^[211]), enable investors to influence corporate behaviour through engagement, voting and proposals (Box 3.18). Government guidance and regulation can strengthen stewardship and promote integration of ESG factors into engagement and voting practices, as seen in the UK Stewardship Code and FCA rules under SRD II. Investor-led initiatives are also emerging, such as Nature Action 100 (Nature Action 100, 2025^[212]), which seeks to increase corporate ambition to reverse biodiversity loss, and Spring, launched by the Principles for Responsible Investment, which engages 60 companies on nature-related risks and practices (ESG News, 2024^[213]).

Box 3.18. Stewardship for nature outcomes – EOS at Federated Hermes Limited case study

Most of the world's market by value remains in publicly listed equities and government or corporate bonds. Investors have an important role to play in influencing practices at companies in their portfolios through active dialogue – stewardship. Investor engagement with executives and board members on material nature-related issues can support companies to strengthen risk management, ensure resilience, and enhance performance over the long term, while mitigating impacts on nature throughout their operations and supply chains.

EOS engages with companies on behalf of stewardship clients, including Federated Hermes funds, collectively representing USD 2.2 trillion in assets under advice.¹ Objectives for companies are set and progress is tracked along milestones. Examples of nature-related objectives for companies include:

- Commit to zero deforestation and conversion across the supply chain;
- Develop a regenerative agriculture strategy with targets and clear mechanisms for measuring improvements in yield, soil health, water, carbon, and biodiversity.

When an objective is achieved, case studies are published to highlight progress, for example at Carrefour² and Associated British Foods.³ As well as direct dialogue with companies, stewardship includes voting recommendations (e.g. on shareholder proposals related to nature or director elections), speaking at annual shareholder meetings, collaborative engagement through initiatives such as Nature Action 100 and the Investor Initiative on Hazardous Chemicals, and influencing market best practice and government policy. For instance, EOS has actively contributed to the TNFD consultation process and continues to engage with policy makers on implementation of the Global Biodiversity Framework, including as co-chair of the policy advocacy working group within the Finance for Biodiversity Foundation.

In summary, stewardship is an important way that investors can address their nature-related risks and impacts, and contribute to systemic changes across the market to support the protection and restoration of nature.

Notes: 1. [EOS Stewardship | Federated Hermes Limited](#); 2. [Carrefour case study | Federated Hermes Limited](#); 3. [Associated British Foods \(ABF\) case study - Federated Hermes Limited](#).

Source: Likhtman, S (2026), EOS at Federated Hermes Limited.

Equity investment funds are collective investment products that invest primarily in listed equities and provide diversified exposure to corporate performance. Biodiversity-related equity funds (Box 3.19) have emerged to invest into listed companies that operate sustainably in sectors with significant nature dependencies and impacts, or that provide products and services intended to reduce biodiversity pressures. These funds typically combine thematic investment, targeting sectors such as sustainable agriculture, forestry and water management, technology and industrial services, with ESG integration and active stewardship (Bioy and Pucci, 2024^[207]; Gangadia, 2024^[208]). They often apply screening criteria to exclude companies with harmful practices (e.g. deforestation) and favourably weigh those demonstrating strong biodiversity commitments, science-based targets or innovative business models linked to ecosystem services (Gangadia, 2024^[208]). In most cases, such funds operate predominantly through secondary markets and influence biodiversity outcomes indirectly through portfolio construction and stewardship, rather than by generating new finance for biodiversity activities.

Biodiversity ETFs track indices that prioritise companies with stronger biodiversity performance or lower nature-related risks, increasingly using science-based datasets and geospatial modelling. In practice, however, most biodiversity-related ETFs focus on risk management and portfolio tilting rather than

delivering measurable biodiversity outcomes. While ETFs offer scalability, liquidity and accessibility for institutional and retail investors, evidence on their financial performance is mixed and ecological impact remains difficult to assess: some studies find ESG ETFs provide diversification and hedging benefits but similar returns to conventional ETFs (Tenorio-Salgueiro et al., 2025^[214]), while others report underperformance relative to conventional ETFs (Baklaci, Cheng and Zhang, 2023^[215]). A recent study of ten biodiversity-focused indices (2022-24) suggests returns are comparable to parent indices, indicating no additional cost for investors (Appio et al., 2025^[216]). Challenges remain, including limited biodiversity data, opaque index methodologies, greenwashing risks and a narrow investable universe, as many nature-positive firms are small or mid-cap and excluded from major indices. Overall, the growth of biodiversity-themed ETFs and investment funds demonstrates increasing investor interest in biodiversity-related risks and opportunities; however, the evidence that these products are delivering measurable biodiversity outcomes remains limited.

Box 3.19. Publicly listed biodiversity funds and exchange traded funds (ETFs): Selected examples

ASN Biodiversity Fund: Launched in 2021 by ASN Impact Investors (part of Volksbank), the ASN Biodiversity Fund was among the first listed funds dedicated to biodiversity. Structured as a fund-of-funds and classified under SFDR Article 9, it invests in specialist impact vehicles and selected listed companies delivering measurable biodiversity benefits. The fund applies strict sustainability criteria and a proprietary metric linking investment to area restored. While innovative in linking finance to biodiversity outcomes, it remains small and has faced challenges in delivering stable financial returns, reflecting the limited maturity and liquidity of biodiversity investments.

Fonds Objectif Biodiversité: launched in 2024 by a consortium of French institutional investors, and managed by Mirova, this listed equity fund with an initial endowment of over EUR 100 million targets small and mid-cap European companies transitioning to sustainable business models or offering biodiversity solutions. The strategy leverages CDP's global environmental disclosure platform to assess biodiversity dependencies, impacts and transition maturity, while excluding companies linked to harmful practices. The fund aims to mainstream biodiversity in public markets by combining financial performance with environmental responsibility.

AXA IM ACT Biodiversity Equity UCITS ETF: Launched in 2022, the AXA Investment Managers ACT Biodiversity Equity UCITS ETF is an actively managed fund targeting companies delivering biodiversity solutions or transitioning toward nature-positive business models. It invests globally across sectors such as sustainable agriculture, water management, circular economy and ecosystem stewardship. Classified under SFDR Article 8, the fund integrates biodiversity impact assessments alongside broader sustainability criteria in its investment process.

HSBC World ESG Biodiversity Screened Equity: Launched in 2022, this ETF by HSBC Asset Management provides global equity exposure with biodiversity-aware screening. It tracks the Euronext ESG Biodiversity Screened World Index, applying exclusions, ESG risk filters and biodiversity metrics developed with Iceberg Data Lab. Classified under SFDR Article 8, it offers a liquid, rules-based instrument for integrating biodiversity considerations and managing nature-related portfolio risks.

Ossiam Food for Biodiversity UCITS ETF: Introduced by Ossiam in partnership with Iceberg Data Lab, this ETF provides thematic exposure to companies addressing biodiversity challenges in food systems. The strategy combines ESG screening with biodiversity footprint metrics, prioritising firms that reduce land-use pressures and support more sustainable supply chains. Classified under SFDR Article 9, it reflects a stated sustainable investment objective, though – like most listed equity funds – its impact

operates primarily through portfolio allocation and corporate exposure rather than direct financing of conservation activities

Note: UCITS: Undertakings for Collective Investment in Transferable Securities. UCITS is the EU regulatory framework governing diversified, liquid investment funds that can be marketed to retail investors across the European Union.

Source: (ASN, 2025^[217]), ASN Biodiversity Fund Factsheet; (ASN Impact Investors, 2025^[218]), ASN Biodiversity Fund; (CDP, 2025^[219]), [Mirova's Biodiversity Fund - CDP](#); (Green Finance Institute, 2025^[220]), GFI HIVE: ASN Biodiversity Fund; (Groupe BPCE, 2024^[221]), Mirova selected to manage the fund "Objectif biodiversité". (AXA Investment Managers, 2025^[222]), AXA IM ACT Biodiversity Equity UCITS ETF Accumulation USD; (ETF Stream, 2022^[223]), AXA IM enters European ETF market with active range; (Graham, 2022^[224]), HSBC Launches Biodiversity ETF; (HSBC Asset Management, 2022^[225]), HSBC Asset Management launches first biodiversity screened ETF; (justETF, n.d.^[226]), Ossiam Food for Biodiversity UCITS ETF 1A.

Private equity and impact-oriented investment

Private equity refers to equity investments in companies whose shares are not publicly traded. It can play a complementary role in biodiversity finance by providing patient and flexible capital, and exercising direct influence over corporate governance, strategy and operations. Through controlling stakes or significant minority holdings, private equity investors can integrate biodiversity considerations across business activities, including due diligence, risk management and strategy.

Longer holding periods, typically five to eight years, create opportunities for sustained engagement on biodiversity issues, particularly compared to shorter-term investment strategies. Exit valuations, which reflect expectations of future profitability, could in principle incorporate improved biodiversity performance. In practice, however, biodiversity risks and impacts are only partially and inconsistently reflected in valuations, limiting the strength of financial incentives for biodiversity outcomes (Invest Europe, 2024^[227]; KPMG, 2023^[228]).

Private equity for biodiversity can be structured through dedicated funds (Box 3.20) or deployed directly. While many impact funds use concessional capital or technical assistance (blended finance) to de-risk early-stage ventures (World Bank Group, 2020^[229]), others rely on pure equity from investors willing to take higher risks for potential returns. Direct investments by venture capital firms, angel investors, family offices and corporate strategic investors often provide first mover capital for early stage and growth phase companies in biodiversity relevant sectors (KPMG, 2023^[228]; World Bank Group, 2020^[229]). These investments typically operate without concessional support, relying instead on investors willing to accept higher risk in anticipation of future returns as markets develop. They play an important role in validating emerging business models before they reach the scale or revenue certainty required to attract institutional capital.

In most cases, financial returns from such investments are rarely derived from biodiversity outcomes alone. Instead, they are typically underpinned by associated revenue streams such as timber, carbon credits, sustainable agricultural production or supply chain integration. As a result, biodiversity benefits are often co-produced alongside climate and land-use objectives, rather than serving as the primary driver of investment returns. This reflects both the current limitations of standalone biodiversity revenue models and the opportunity for co-delivering biodiversity, climate and land-use outcomes within a single investment structure – provided biodiversity objectives are explicitly defined, monitored and reported, rather than treated as incidental co-benefits.

Box 3.20. Natural capital and impact investment funds

BNP Paribas Future Forest Fund: Launched in 2024 with International Woodland Company, BNP Paribas Asset Management's Future Forest Fund (FFF) is an Article 9 SFDR strategy targeting USD 500 million. The fund invests in FSC-certified or certifiable forests in mature markets, combining timber revenues with climate mitigation and biodiversity objectives. Structured as a 12-year vehicle for institutional investors, it offers long-term returns and diversification. Initial acquisitions include 8 550 ha of US timberland delivering multifunctional value: timber, carbon sequestration, biodiversity habitat and recreation. While biodiversity is an explicit objective, financial returns are primarily driven by timber and land-based revenues.

Climate Asset Management (HSBC & Pollination): Launched in 2020 through a joint venture between HSBC Asset Management and Pollination, Climate Asset Management (CAM) is a natural capital investment platform that has raised over USD 1 billion across three flagship funds: the Natural Capital Fund, focused on regenerative agriculture and sustainable forestry; the Nature Based Carbon Fund, targeting biodiversity-rich restoration in emerging economies; and the Apple-backed Restore Fund. CAM has deployed capital across more than 2 million ha, including regenerative farming in Australia, sustainable forestry in New Zealand, restoration in Kenya with Maasai, and agro-ecological projects in Spain and Portugal. CAM combines institutional capital with technical expertise to deliver climate and biodiversity outcomes at scale, although biodiversity benefits are typically integrated alongside broader climate and land-use objectives.

L'Oréal Fund for Nature Regeneration, managed by Mirova Natural Capital: Launched in 2020, L'Oréal's EUR 50 million Fund for Nature Regeneration is designed to restore ecosystems critical to the company's value chain. Its goal is to achieve a net-positive impact, improving ecosystem health while supporting local communities. The fund focuses on 15 priority feedstocks across three regions, representing 90% of L'Oréal's biodiversity impacts. Applying a landscape-level mitigation hierarchy, it prioritises avoiding deforestation, reducing biodiversity loss and restoring degraded ecosystems. Investments include reforestation, mangrove restoration and regenerative agriculture, delivering measurable outcomes for biodiversity, water resources and community resilience.

Ardian's Averrhoa Nature-Based Solutions Fund: Launched in 2023 with ecosystem restoration specialist aDryada, Ardian's Averrhoa Fund is an SFDR Article 9 impact strategy targeting EUR 500 million. It secured a first close of about EUR 100 million from anchor investors including the European Investment Bank, Proparco and British International Investment. The fund finances afforestation, reforestation, mangrove and peatland restoration projects in Latin America, Sub-Saharan Africa and Southeast Asia, with typical investments ranging from USD 5 million-30 million. Averrhoa aims to restore roughly 100 000 ha and sequester tens of millions of tonnes of CO₂, generating carbon credits alongside biodiversity and social co-benefits for communities.

Source: (Ardian, 2023^[230]), Ardian and aDryada announce the launch of Averrhoa Nature-Based Solutions; (Climate Asset Management, 2025^[231]), Climate Asset Management: Our Story, [Climate Asset Management | About](#); (EIB, 2025^[232]), [EIB Global pledges €50 million to reforestation fund run by private investment firm Ardian](#); (Fabre, 2025^[233]), L'Oréal for the Future, Presentation at OECD Workshop on Mobilising Public and Private Finance for Biodiversity. [Biodiversity workshop, May 2025, Jehanne Fabre | PDF](#) (L'Oréal Groupe, n.d.^[234]), L'Oréal Fund for Nature Regeneration, [L'Oréal Groupe: L'Oréal Fund for Nature Regeneration](#); (Paribas, 2025^[235]), BNP Paribas Future Forest Fund Announces its First Two Investments; (Rossingh, 2024^[236]), BNP Paribas, IWC launch \$500m sustainable forest fund; (Segal, 2024^[237]), HSBC, Pollination JV raises Over \$1 Billion for Natural Capital Investment Platform, [HSBC, Pollination JV Raises Over \\$1 Billion for Natural Capital Investment Platform - ESG Today](#).

Good practice in private equity involves incorporating biodiversity considerations into due diligence, including assessment of a company's exposure to land-use change, water scarcity, ecosystem degradation, supply-chain risks and regulatory liabilities. Leading private equity firms are beginning to pilot SBTN and TNFD-aligned approaches, including scenario analysis and geospatial screening to identify nature-related risks (TNFD, 2023^[238]; KPMG, 2023^[228]). Post-investment, governance rights, board participation and management incentives can be used to promote biodiversity-positive practices.

Across private equity markets, several structural constraints limit the effectiveness of biodiversity finance. These include limited availability of biodiversity-relevant data for small and medium-sized enterprises, high due diligence costs, uncertain revenue models and exit challenges linked to the weak recognition of biodiversity value in public market valuations (Huang et al., 2024^[239]; King, Bromfield and Milborrow, 2023^[240]). In addition, transparency and accountability remain more limited than in public equity markets, as financial reporting and disclosure requirements are generally less rigorous, constraining visibility of nature-related dependencies, impacts and risks and limiting the ability of regulators, investors and other stakeholders to assess alignment with biodiversity objectives (Box 3.21). At the same time, opportunities are expanding, as financial institutions increasingly expect investees to integrate biodiversity considerations (ESG News, 2024^[213]). Blended finance instruments can help support early-stage scaling of promising solutions (World Bank Group, 2020^[229]). As biodiversity-related disclosure, measurement and market infrastructure continue to mature, the potential role of private equity investors in influencing corporate behaviour and directing capital towards nature-positive business models is likely to increase.

Box 3.21. Private equity markets and biodiversity effects

Private equity markets globally typically face less rigorous financial reporting standards than public financial markets, limiting transparency of their nature-related dependencies, impacts and risks. An analysis reviewing 150 large private equity firms found that 81 published a sustainability report. Among these, 54 mentioned biodiversity or related terms. Twenty-one firms expressed a commitment to addressing biodiversity loss, with 57% focused on improving understanding of biodiversity impacts. Only seven firms set forward-looking targets, and just one articulated its goal using specific, measurable, achievable, relevant and time-bound criteria. In effect, only one of the top 150 private equity firms made a biodiversity pledge rigorous enough to ensure accountability, highlighting a significant gap between current reporting practices and the Kunming-Montreal Global Biodiversity Framework's Target 15.

Source: (Carter et al., 2025^[241]), Increase the regulation of biodiversity effects from private equity markets, 10.1038/s41559-025-02828-y.

Good practices for scaling up and increasing the effectiveness of equity financing for biodiversity

Integration of biodiversity into equity strategies is increasing but remains challenging due to fragmented metrics, location-specific impacts that complicate global supply chain analysis and limited corporate disclosures. Unlike climate, there is no universal measure comparable to CO₂, and current indicators often fail to fully capture biodiversity impacts and material biodiversity risks to support evaluation of a company's performance (Clément and Grenon, 2025^[242]; Xin et al., 2025^[243]; Zhu and Carrasco, 2025^[244]). This limits investors' ability to assess exposure and price nature-related risks accurately.

Financial institutions and investees can draw from a growing array of biodiversity measurement approaches (see also section 4.3). These include methodologies for impact measurement (e.g. Mean Species Abundance, Global Biodiversity Score), dependency assessment (e.g. ENCORE) and risk-screening tools (e.g. WWF Biodiversity Risk Filter), supported by geospatial data (Finance for Biodiversity,

2025^[245]). Challenges persist around data granularity, accessibility and interoperability of nature-related data and tools (Barclays, 2025^[246]). Global initiatives like the Taskforce on Nature-related Financial Disclosures, the Partnership for Biodiversity Accounting Financials (PBAF, 2024^[247]), and the Science Based Targets Network (SBTN, 2025^[248]) are driving convergence to establish more consistent expectations for measurement, disclosure and action.

Regulatory efforts, such as sustainable finance taxonomies and disclosure requirements (see also section 4.3), are improving data availability and transparency, while data providers develop tools to support fund design and reduce greenwashing risks. As demand for biodiversity-aligned products grows, clear policy guidance, methodological coherence, and minimum standards will be critical to ensure integrity and comparability (Gangadia, 2024^[208]). Complementary measures, such as incentives, technical assistance and pipeline development can help scale investable opportunities, particularly in emerging markets, and translate financial innovation into real economy impact.

Good practices and priorities to scale up and increase the effectiveness of equity financing for biodiversity include the following:

- **Strengthen decision-useful metrics, standards and disclosure:** Improve the quality, consistency and interoperability of biodiversity metrics, taxonomies and disclosure frameworks to support investor decision-making, enhance comparability across equity products and reduce greenwashing risks. This includes improving access to spatially explicit biodiversity and nature-related data across both public and private markets.
- **Align financial incentives, governance and investment practices with biodiversity outcomes:** Integrate biodiversity considerations into due diligence, risk management and capital allocation processes. Governments and regulators can support this through sectoral transition pathways, clearer policy signals, integration of nature-related risks into financial supervision and fiduciary guidance, and support for the development of biodiversity-related revenue streams.
- **Strengthen active ownership and investor stewardship with a biodiversity focus:** Encourage investors to integrate biodiversity considerations into engagement, voting and capital allocation decisions, supported by clear stewardship expectations and corporate governance standards. This can strengthen corporate accountability and incentivise corporate transition strategies in sectors with significant biodiversity impacts and dependencies.
- **Provide targeted public support while safeguarding market integrity:** Deploy focused public support, including pipeline development, early-stage project development and blended finance, to de-risk early-stage and high-impact opportunities, particularly where market barriers limit private investment. Public support should be accompanied by robust safeguards, transparency and accountability mechanisms to maintain market integrity and environmental credibility.
- **Develop clear rules for biodiversity-related investment products and claims:** Regulators and standard-setting bodies should establish clear guidance for biodiversity-related funds, benchmarks and investment claims to improve transparency, comparability and investor confidence while reducing risks of greenwashing and misleading claims.

3.2.3. Risk transfer and insurance mechanisms

Mobilising private finance for biodiversity requires addressing a central constraint: the mismatch between the risk profile of nature-related investments and the risk tolerance of commercial investors. Biodiversity projects typically face uncertain or long-term revenue streams, exposure to policy and regulatory change, and operational risks linked to ecological complexity, land tenure and local governance. Even where investment opportunities exist, they are often perceived as too risky relative to expected returns. These risks arise in both international development finance and domestic biodiversity finance in OECD and non-OECD countries, although the structure of the transactions and relevant institutions may differ. Risk

management instruments therefore play a critical role by redistributing, mitigating or transferring risks that would otherwise deter private capital. Unlike many other biodiversity finance instruments, risk-transfer mechanisms do not generally create new revenue streams; rather, they seek to make existing investment opportunities financeable. However, their effectiveness depends on the existence of investable, well-structured projects (section 4.2).

A range of financial instruments exist to address these challenges. These include credit enhancement instruments, such as guarantees and first-loss capital, which improve the creditworthiness of investments by protecting lenders or investors from losses, and insurance instruments, which shift specific risks to third parties. Used individually or in combination, often within blended-finance structures, these instruments can improve the risk-return profile of biodiversity investments, lower the cost of capital and facilitate participation by a broader range of private investors. They act on the financing side and are distinct from mechanisms that stabilise or generate revenue, such as offtake commitments and price floors (section 4.2.1). While often deployed through international development finance, they can also be deployed by domestic public finance institutions in OECD and non-OECD countries to mobilise private capital for biodiversity.

Guarantees

Public and private financial institutions can use guarantees and other risk-sharing instruments to mobilise investment in biodiversity-related activities. Public actors, including multilateral development banks, bilateral donors, national development banks and domestic public finance institutions, often play a catalytic role in providing such guarantees. Guarantees are legal commitments whereby a public or third-party actor agrees to cover part or all the losses associated with an investment in the event of default or underperformance (OECD, 2025^[249]). They can cover different types of commercial or political risks and provide full or partial coverage of payments (e.g. principal and/or interest) (OECD, 2021^[250]). By reducing downside risk for lenders and investors, guarantees can improve the perceived risk–return profile of biodiversity projects and facilitate access to finance (EIB, 2023^[251]).

Guarantees do not require full upfront public expenditure but create contingent liabilities and necessitate budget provisioning (OECD, 2021^[250]). This makes them a potentially efficient instrument for leveraging limited public resources to mobilise larger volumes of private capital. In practice, guarantees are often deployed as part of broader blended finance structures, including those supported by public financial institutions and development finance institutions.

Guarantees have been perceived to be effective in mobilising private climate finance (Bhandary, Gallagher and Zhang, 2021^[252]; OECD, 2025^[249]), and are now being applied in biodiversity-related transactions. However, evidence from climate finance is not directly transferable to biodiversity finance, given differences in market maturity, revenue models and the measurability of outcomes. Current applications in biodiversity remain relatively small-scale and often rely on strong public or multilateral support. Examples include the European Union InvestEU Sustainability Guarantee Product, which reduces risk for sustainable investments across environmental sectors (EIF, 2026^[253]), and sovereign instruments such as the Seychelles' Sovereign Blue Bond, supported by a partial guarantee from the World Bank (World Bank Group, 2018^[254]).

While guarantees can help attract private investment into biodiversity and NbS projects, further empirical assessment of their effectiveness, additionality and cost efficiency is needed. Their impact depends on the availability of a pipeline of viable, revenue-generating projects, yet biodiversity markets remain immature: relatively few projects have robust business models, and many developers lack the financial and technical capabilities required for investment readiness (EIB, 2023^[251]). Because guarantees share rather than fundamentally alter risk, they cannot make untested or early-stage projects bankable on their own. An additional challenge is that guarantees are often complex because they involve multiple parties, detailed risk-allocation rules and institution-specific procedures that can be difficult for borrowers and financial

intermediaries to navigate (Bellesi, Denis and Schenk, 2025^[255]). This complexity can slow uptake, increase transaction costs and make guarantee products harder to access, particularly in markets with limited technical capacity (OECD, 2025^[249]). Nevertheless, when paired with concessional finance, early-stage grants and technical support that strengthen project design and financial structuring, guarantees can play a valuable role in scaling private investment into biodiversity.

Instruments providing first-loss capital: subordinated debt, junior equity and concessional grants

First-loss capital plays a central role in mobilising private finance for biodiversity within blended-finance structures. By agreeing to absorb an outsized share of losses, first-loss providers improve the risk-return profile for commercial investors and make nature-related investments more bankable (Flammer, Giroux and Heal, 2025^[256]) (IDH and Mirova, 2025^[257]). First-loss capital may be provided by public actors (e.g. national or multilateral development banks, biodiversity and climate funds, and other government-backed facilities) or by private catalytic actors (e.g. philanthropic foundations, high-net-worth individuals and impact-first funds) that prioritise environmental outcomes, and are willing to take junior positions (GIIN, 2013^[258]). Concessional junior tranches can absorb early losses or accept lower returns, enabling senior investors to benefit from enhanced downside protection and more predictable cash flows.

First-loss commitments are implemented through instruments such as subordinated debt, junior equity or concessional grants, all of which sit below senior capital in the repayment hierarchy. These instruments are particularly relevant in sustainable agriculture, forestry, ecosystem restoration and deforestation-free supply chains, where revenues may be uncertain, long-term or dependent on evolving markets. By improving risk allocation, they can help unlock investment in contexts where commercial finance would otherwise be unwilling to engage. Examples include vehicles such as the Land Degradation Neutrality Fund (IDH and Mirova, 2025^[257]; UNCCD, 2026^[259]), the Global Fund for Coral Reefs (GCF, 2022^[260]; UNDP, 2026^[261]) and the Mobilising Finance for Forests programme (FMO, 2026^[262]), which use first-loss capital from public or concessional sources to enable participation by commercial investors (see section 4.2.2).

As with guarantees, however, first-loss structures are not a standalone solution. Their effectiveness depends on the presence of credible business models, appropriate project scale, and sufficient technical and financial capacity among project developers. Without these conditions, concessional capital may fail to crowd in private investment or may lead to inefficient allocation of public resources. There is also a risk that excessive risk protection for private investors could weaken incentives for due diligence or crowd out commercially viable investments (Mazzucato, 2025^[263]; WEF, 2026^[264]). Moreover, studies of biodiversity finance emphasise that blended structures cannot substitute for coherent public policy or address fundamental market failures, limiting their scalability (Flammer, Giroux and Heal, 2025^[256]). Evidence from the broader blended finance literature underscores the importance of demonstrating additionality and avoiding over-subsidisation (IFC, 2020^[265]; Mazzucato, 2025^[263]). First-loss capital can therefore play an important enabling role, but it must be used selectively, transparently and alongside policy reforms and capacity building to achieve durable, system-level impacts in biodiversity finance.

Parametric insurance and resilience bonds

Parametric insurance is a risk-transfer mechanism that pays out automatically when a predefined environmental trigger – such as rainfall levels, wind speed, or temperature thresholds – is met, rather than requiring individual loss assessment as in traditional indemnity-based insurance. In the context of biodiversity, it can provide rapid funding to protect vulnerable ecosystems after weather-related shocks like hurricanes, droughts, or coral bleaching events. By delivering timely liquidity, parametric models help conservation groups and governments safeguard habitats, stabilise ecosystem services, and strengthen ecosystem and economic resilience.

A disadvantage of parametric insurance is that there is a risk of over- or under-payment as payouts are triggered by a pre-defined parameter rather than the actual losses incurred (World Bank, 2022^[266]). This can undermine confidence in the instrument, particularly where ecological damage is highly localised or where the relationship between the trigger parameter and biodiversity outcomes is not well established. Addressing basis risk requires careful design of trigger parameters, ideally grounded in ecological monitoring data, and transparency with insured parties about the instrument's limitations.

Overall, the broader parametric insurance market size reached USD 21.09 billion in 2025 (Business Research Company, 2026^[267]), i.e. covering index- and weather-based insurance, catastrophe bonds, and others. Information on the precise share of the market that relates to biodiversity-specific programmes is unavailable, but indications suggest that it is a very small fraction. Biodiversity-specific examples cover coral reef, mangroves, fisheries-linked coastal livelihoods and forests (Box 3.22). Scaling will require investment in ecological monitoring infrastructure to support robust trigger design, public support to reduce premium costs in lower-income countries where biodiversity assets are often concentrated, and greater standardisation to reduce transaction costs across programmes.

Resilience bonds²² are a conceptually related but structurally distinct instrument. They adapt the catastrophe bond structure to link returns to avoided losses from risk-reduction investments – for example, ecosystem restoration that reduces flood damage – converting those avoided losses into a revenue stream that funds the investment (Motlagh et al., 2024^[268]). Conceptually developed by re:focus in 2015, resilience bonds have not yet achieved widespread adoption, with few if any practical examples meeting these resilience rebate criteria.

A key challenge cited is the inherent complexity involved in forecasting counterfactual disaster scenarios and attributing specific financial savings to resilience interventions. Nevertheless, the concept is analytically important as it points toward a model in which the economic value of ecosystem services, including disaster risk reduction, is directly monetised into investment returns rather than treated as an externality. As ecological monitoring and financial modelling capabilities improve, this instrument class warrants continued attention and piloting.

Box 3.22. Examples of parametric insurance for biodiversity

Quintana Roo coral reef, Mexico: A public-private Coastal Zone Management Trust collects fees from hotels and coastal property owners, as well as from government, to pay premiums on parametric hurricane insurance policy, originally designed to protect 100 miles of the Yucatan coast. Launched by Swiss-Re and The Nature Conservancy in 2018, the policy was triggered in 2020 when Hurricane Delta hit the covered area as a Category 3 storm, resulting in a USD 800 000 payout to support coral reef restoration.

Mesoamerican Reef (MAR) programme, Belize, Guatemala, Honduras and Mexico: Designed to strengthen the existing conservation programme of the Mesamerican Reef Fund, the MAR Insurance Programme was launched in 2020, with Willis Towers Watson, InsuResilience Fund (ISF) and AXA Climate. The programme covers 11 sites. The insurance premium is supported with funds from ISF and UNDP through the AF-EU-UNDP Innovation Small Grant Aggregator Platform (ISGAP). Following Hurricane Lisa in 2022, USD 175 000 was provided to Belize.

Blue bond catastrophe wrapper, Belize: In December 2021, Belize issued a USD 364 million blue bond supported by a parametric insurance “catastrophe wrapper”. Arranged by Credit Suisse and structured by Willis Towers Watson (with risk capacity from Munich Re), the mechanism provides insurance coverage for sovereign loan repayments following hurricanes. With such a safeguard as part of the country’s 20-year sovereign debt structure, the parametric transfer of risk seeks to strengthen Belize’s resilience to climate shocks, helping to prevent credit rating downgrades and reducing recovery time after shocks.

Water insurance, Paramos, Colombia: UNDP, WWF and Seguros Sura, a local insurer, partnered in 2025 to create parametric insurance for the Paramos ecosystem, a high-altitude wetland ecosystem that provides water to millions of inhabitants but increasingly threatened by wildfires. The insurance premiums are financed by the private sector whereby payouts from companies reliant on water from Páramos are channelled to professional and volunteer firefighters, enabling rapid deployment of resources for emergency response.

Source: (Green Finance Institute, 2024^[269]), Quintana Roo Reef Protection; (World Bank, 2022^[266]), Insuring Nature’s Survival; [fontana-raina.pdf](#); (Sharma, 2025^[270]), Nature at Risk: The Role of Insurance in Biodiversity Protection.

Good practices for risk transfer and insurance mechanisms

First-loss capital, guarantees and insurance instruments play complementary roles in addressing different types of risk. First-loss capital can absorb early-stage uncertainty and support the development of new financing models; guarantees can reduce specific, well-defined risks and help crowd in commercial lenders and investors; and insurance can transfer or mitigate risks associated with volatility and extreme events. Used together, these instruments can address different layers of risk across the investment lifecycle, lower financing costs, strengthen resilience and help mobilise capital for investments that deliver verified nature-positive outcomes. Although risk-transfer instruments are unlikely to become major sources of biodiversity finance in their own right, they can play an important enabling role by improving the risk-return profile of biodiversity investments and helping to mobilise private capital that would otherwise not flow to biodiversity.

Good practices and opportunities for risk transfer and insurance mechanisms include (OECD, 2025^[249]; FMO, 2026^[271]):

- **Scale up the strategic use of first-loss capital and guarantees as market building tools:** Public institutions such as national and multinational development banks, bilateral donors and

domestic public finance providers, should prioritise first-loss capital and guarantees explicitly to mobilise commercial investment in biodiversity and nature-based solutions, rather than as permanent subsidies.

- **Target structural barriers with tailored risk-sharing instruments:** Use guarantees, first-loss structures and parametric insurance to address high perceived policy risk, transition risks from emerging regulation, supply chain incentive misalignments and climate-nature shock exposure (droughts, floods, fires) that currently deter private capital.
- **Ensure additionality and disciplined deployment:** Apply risk-sharing instruments only where commercial alternatives are unavailable, with clear rules requiring they crowd in, rather than substitute for, private investment, and link concessionality to verified biodiversity outcomes.
- **Simplify and standardise products for scalability:** Streamline guarantee, first-loss and insurance product design, including processes, terminology, contract clauses, risk coverage, pricing, access rules and regulatory capital treatment, to reduce transaction costs and improve usability at scale.
- **Pair financial instruments with technical and outcome support:** Combine risk-sharing tools with technical assistance for governments, project developers and local institutions, plus outcome-based incentives such as resilience bonds that monetise avoided losses from nature-based solutions, linking investment returns to verified ecosystem protection, restoration and disaster risk reduction.

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Notes

¹ i.e. 87% of aquaculture production (excluding seaweeds), 69% of marine capture fisheries production and 93% of seaweed production.

² [Performance-based grant - Elinvoimakeskus](#).

³ For an overview of all three, see (OECD, 2025^[1]).

⁴ Forest Trend’s Ecosystem Marketplace defines Nature-based Credits as credits generated by projects that achieve greenhouse gas emissions reductions or removals by conserving, restoring, and/or managing natural and agricultural ecosystems. All projects within EM’s Agriculture and Forestry and Land Use categories are considered nature-based credits.

⁵ Removal credits come from actions that take greenhouse gases out of the atmosphere and store them, such as through reforestation projects. In contrast, reduction credits prevent or reduce emissions compared to the status quo, including projects such as protecting forests at risk of destruction.

⁶ MSCI also find that 832 registered carbon credit projects were aligned with SDG 15 on Life on Land, and 33 projects were aligned with SDG 14 on Life Below Water.

⁷ The following protocols are reviewed: • American Carbon Registry’s (ACR) Improved Forest Management (IFM) on Non-Federal U.S. Forestlands • Climate Action Reserve’s (CAR) Mexico Forest Protocol (MFP) • CAR’s Soil Enrichment Protocol (SEP) • Verra’s Climate, Community, and Biodiversity (CCB) Standard⁴⁹ • Ecosystem Restoration Standard’s (ERS) Methodology for Terrestrial Forest Restoration (M001) • Plan Vivo’s Carbon Standard (PV Climate) • Verified Carbon Standard’s (VCS) VM0042, VM0045 and VM0047 methodologies.

⁸ Personal communication, Martin Vaquier, Co-founder and CPO, bloomlabs, April 23, 2026

⁹ The IAPB report refers to such biodiversity offset programmes as ‘compliance compensation’ frameworks.

¹⁰ [Biodiversity Market Register | Clean Energy Regulator](#)

¹¹ [Voluntary nature credits market in New Zealand | Ministry for the Environment](#)

¹² [Government proposes amendments to Nature Conservation Act - Ministry of the Environment](#)

¹³ https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14723-Roadmap-towards-Nature-Credits_en

¹⁴ Fixed income means they offer predictable and controlled returns.

¹⁵ Climate Bonds screens self-labelled green bonds against a science-based methodology to ensure they align with climate goals, environmental impact, and minimum safeguards.

¹⁶ *Nature-themed bonds* refer to green bonds whose eligible use of proceeds includes activities related to ecosystems, natural resources, or ecosystem services (e.g. land use, water management, or nature-based solutions), consistent with ICMA's Sustainable Bonds for Nature: A Practitioner's Guide. *Biodiversity-explicit bonds* refer to a subset of nature-themed bonds where use-of-proceeds frameworks or impact objectives explicitly target biodiversity outcomes (e.g. species, habitats, or ecosystem integrity), rather than broader environmental or climate objectives.

¹⁷ While climate and nature are connected, not all climate-related projects directly benefit nature beyond addressing climate change as a driver of nature loss, and not all nature-related projects support climate change mitigation or adaptation. Furthermore, some “nature-based” projects do not per se benefit – and may harm – biodiversity (e.g. planting exotic tree species to sequester carbon) and are therefore not consistent with the UNEA definition of nature-based solutions.

¹⁸ A built-in pricing adjustment in a bond or loan that raises the coupon/margin (*step-up*) or lowers it (*step-down*) if pre-agreed sustainability targets are not met or exceeded by specific dates. Most common in sustainability-linked bonds (SLBs) and sustainability-linked loans (SLLs)

¹⁹ According to Carter et al. (2024^[272]), 11 impact bonds have been developed in the field of “agriculture and environment”, and only a subset of these includes a biodiversity focus.

²⁰ Funds with biodiversity in their name and investment strategies.

²¹ Under the EU Sustainable Finance Disclosure Regulation (SFDR), Article 8 applies to financial products that promote environmental and/or social characteristics, provided that investee companies follow good governance practices. Article 9 applies to financial products that have sustainable investment as their objective; investments qualifying as sustainable must contribute to an environmental or social objective, do no significant harm to other such objectives, and meet good-governance requirements. N.B. the SFDR is being revised with legislative proposals for a SFDR 2.0 that with three categories of sustainability-related products – sustainable, transition and ESG basics – each with stricter eligibility criteria and restrictions on what claims can be made.

²² Resilience bonds discussed in this report should not be confused by more recently named resilience bonds such as the Tokyo Resilience Bond, which are standard use-of-proceeds bonds that finance climate adaptation.

4. From instruments to systems: Enabling conditions and scaling pathways

Biodiversity finance instruments operate within a broader policy, market and institutional context that ultimately determines their effectiveness and scalability. Despite growing interest from investors and policy makers, biodiversity finance initiatives continue to face significant barriers, including uncertain revenue models, elevated real and perceived risks, and a shortage of investment-ready projects. This chapter examines how governments and other stakeholders can address these constraints by strengthening enabling conditions for investment. It explores how financing instruments interact in practice, how projects can be prepared and aggregated to attract capital, and how data, policy frameworks, governance arrangements and institutional capacity can support the mobilisation of finance for biodiversity at scale.

The previous chapter examined a range of financing instruments for biodiversity. In practice, however, these mechanisms do not operate in isolation but interact within broader policy and institutional frameworks that shape investment. Many biodiversity finance initiatives continue to face structural constraints, including uncertain or fragmented revenue streams, high real and perceived risks, and a limited pipeline of investment-ready projects. This chapter therefore explores how systemic conditions determine scalability and effectiveness of biodiversity finance. It discusses how financing tools interact, how to develop projects that attract investment, and the role of data, policy and governance frameworks.

4.1. Complementarity of biodiversity finance instruments

Biodiversity finance instruments often work in combination rather than in isolation. Individual instruments generally address specific constraints, such as revenue generation, price signals, risk reduction or capital mobilisation, but rarely resolve all barriers on their own. Effective approaches therefore tend to combine complementary instruments and sources of capital. These combinations bring together revenue-generating mechanisms, financial instruments and risk-sharing tools to align incentives, manage risks and attract different types of capital.

Real economy instruments, such as PES and biodiversity mitigation banking schemes create revenue streams and price signals linked to biodiversity outcomes. By translating these outcomes into cash flows or compliance-driven demand, these instruments can help make biodiversity projects more investable, particularly where supported by stable regulatory frameworks, robust monitoring systems and sustained demand. Without such enabling conditions and revenue streams, engagement by financial institutions is likely to remain limited.

Financial instruments such as equity, loans and bonds can be used to mobilise capital. In practice, these are typically combined through layered capital structures that include different forms of debt and equity with varying levels of seniority and risk. Debt is generally suited to activities with established or predictable revenues, supporting scale-up and refinancing, while subordinated or mezzanine capital can absorb higher risks. Equity serves both a catalytic and an alignment function: providing first-mover capital for new biodiversity-positive activities and enabling longer-term financial alignment through capital allocation and stewardship as markets mature.

Risk-management instruments, including guarantees, first-loss or subordinated capital, insurance and other risk-transfer tools, can then be used to address both real and perceived investment risks. By improving risk-return profiles, these instruments help crowd in commercial finance and enable participation by actors with lower risk tolerance. Blended finance structures commonly combine these tools, with public or philanthropic capital taking higher-risk positions.

The effectiveness of these financing structures often depends on sequencing and integration. In many cases, credible revenue streams or policy-driven demand must first be established before risk-sharing instruments can significantly improve investment attractiveness. Derisking measures can help address uncertainty and accelerate capital mobilisation, but they are generally insufficient where underlying revenue models remain weak or unproven. The relative importance of revenue support, risk sharing and concessional finance varies across sectors, jurisdictions and stages of market development (section 4.2.2).

Innovation in both the public and private sectors is finding new models for combining these instruments. Effective combinations of instruments are important for mobilising private finance (discussed further in section 4.2), and for enhancing public finance. For example, securities such as green bonds can allow governments or public entities to access capital markets and secure upfront funding for biodiversity outcomes, as illustrated by frameworks that enable the securitisation of predictable conservation-related revenues. Securitisation¹ of fees and taxes has shown promise in financing climate adaptation (OECD, 2023^[1]), and is being considered for biodiversity in countries such as Costa Rica (Box 4.1).

Box 4.1. Future-flows securitisation of protected area revenues in Costa Rica

Costa Rica's proposed Future Flows Securitisation Bill (Law No. 23.896) illustrates a potentially replicable and scalable model for mobilising private finance using public natural-capital revenues. By monetising predictable revenue streams, the approach front-loads conservation finance.

Under the proposed framework, the National System of Conservation Areas, operating under the Ministry of Environment and Energy, would be authorised to securitise future revenues from protected area entrance fees. Implementation is expected to involve the establishment of a Special Purpose Vehicle (SPV) – a legally separate entity used to ring-fence assets and manage financial risk – which could issue green bonds backed by these revenues. Proceeds from the bond issuance would be used to finance biodiversity-related investments in protected areas, while maintaining a clear link between repayment and conservation-related revenue sources.

A defined share of future entrance-fee revenues would be earmarked to service the bonds, covering both principal and interest. Anchoring repayment to relatively stable tourism-based income is intended to strengthen investor confidence while preserving fiscal space for the central government. While the model aims to enhance the long-term financial sustainability of conservation systems by leveraging domestic revenue streams, early issuances may still require risk-mitigation measures or blended finance elements, depending on market conditions.

Source: (BIOFIN, 2025^[2]), Costa Rica's Future Flows Securitization Bill for Protected Areas provides a replicable model for unlocking public-private finance; (OECD, 2025^[3]), OECD DAC Blended Finance Guidance, 2025.

4.2. Building and financing a pipeline of bankable projects for biodiversity

Mobilising biodiversity finance requires not only suitable instruments, but also a pipeline of bankable projects. Many initiatives are too small, complex or uncertain to attract private investment. They often lack predictable revenues, face high transaction costs, and operate in contexts with unclear land tenure or evolving regulation (zu Ermgassen et al., 2025^[4]; Löfqvist, Garrett and Ghazoul, 2023^[5]). Weak track records, limited standardisation and the long time horizons of ecosystem recovery further increase perceived risk (Plantinga et al., 2023^[6]; zu Ermgassen et al., 2025^[4]; Löfqvist, Garrett and Ghazoul, 2023^[5]). The result is a persistent mismatch between available capital and investable opportunities.

Public finance therefore remains essential, particularly for activities that generate public goods without direct revenue flows. Yet there remains potential to mobilise additional private capital. Strong project design, diversified revenue models, targeted de-risking instruments and, where appropriate, project aggregation, can all improve the commercial viability of biodiversity investments. Governments play a central role in this process: as providers of early-stage funding and technical assistance, as risk-sharing partners, and as market creators through policy and regulation (see also section 4.3) (Flammer, Giroux and Heal, 2025^[7]; zu Ermgassen et al., 2025^[4]). The remainder of this section explores how to build a stronger pipeline of bankable biodiversity projects and the financing structures required to bring them to scale.

4.2.1. Designing impactful, revenue generating projects

Securing sufficient and predictable revenues

Biodiversity projects can generate revenue from both traditional and environmental sources. These include sustainably produced commodities (e.g. timber, agriculture and fisheries) and services such as ecotourism. In many cases, biodiversity functions as a public good and becomes financially viable when bundled with private goods – for example, when conservation enhances tourism value (Flammer, Giroux and Heal, 2025^[7]). Sustainable production of commodities and services may benefit from certification premiums, yield improvements and reduced costs through more efficient use of inputs (e.g. synthetic fertilisers) (EIB, 2023^[8]; Queru, 2025^[9]) (Van Raalte and Ranger, 2023^[10]). Additional revenues may come from payments for ecosystem services, carbon credits and nature markets (EIB, 2023^[8]; Queru, 2025^[9]).

Given the diversity of potential revenue streams, many biodiversity and nature-based solutions projects rely on stacked or diversified revenue models. By combining commodity sales, certification premiums, payments for ecosystem services and revenues from environmental credit markets, projects can strengthen financial resilience and reduce exposure to fluctuations in any single source of income. Diversification can also help better align financial returns with ecological performance, particularly where revenues are linked to verified biodiversity outcomes. When appropriately designed, stacking environmental credit revenues may additionally increase the overall environmental benefits delivered by a project by strengthening incentives for integrated ecosystem management (OECD, 2015^[11]).

However, stacked revenue models can also increase governance complexity. Where revenues draw on multiple environmental credit systems, such as nutrient trading, carbon credits or biodiversity offset units, particular care is required to ensure environmental additionality, avoid double counting and maintain regulatory compliance (OECD, 2025^[12]; von Hase and Cassin, 2017^[13]). Risks are highest in vertical stacking, where multiple credits are generated from overlapping ecosystem services at the same site. Clear regulations, strong measurement standards and a high degree of transparency are therefore essential to safeguard environmental integrity and maintain investor and stakeholder confidence (OECD, 2025^[12]).

Governments, alongside other public and private actors, can improve the predictability of revenue streams from biodiversity and nature-based projects. One of the most powerful levers governments have is to establish compliance frameworks that create sustained demand for environmental outcomes (e.g. United Kingdom's Biodiversity Net Gain framework and Wetland Mitigation Banking under the Clean Water Act in the United States) (see section 3.1.3).

Where markets for environmental credits remain nascent or illiquid, public and private actors could also support revenue stability through mechanisms such as price floors, guaranteed offtake arrangements or advance purchase commitments. Price-floor mechanisms can mitigate downside risk by assuring a minimum credit value, while offtake arrangements and advance purchase commitments enhance bankability by securing predictable cash flows or providing early revenue certainty. Corporate buyers may engage in long-term offtake agreements when these are linked to supply-chain requirements or net-zero and nature-positive commitments.

These mechanisms can reduce revenue uncertainty and help crowd in private capital, provided they are transparent, time-bound and fiscally sustainable. Examples include the UK's Woodland Carbon Guarantee (Woodland Carbon Code, 2024^[14]), and long-term offtake agreements that provide revenue certainty, such as Microsoft's carbon removal purchases under the Amazon Outcome Bond (World Bank, 2024^[15]); and corporate offtake arrangements supporting the Spekboom Restoration Outcome Bond project in South Africa (World Bank Group, 2026^[16]).

Integrating projects into landscapes and jurisdictions

Scale matters for both nature and investors. Ecological processes operate across spatial scales that extend beyond individual projects. Effective interventions therefore need to reflect the scale at which ecological interactions occur, including habitat connectivity, wildlife corridors, water flows, and nutrient and energy cycles (University of Canterbury, 2025^[17]; Jeanneret et al., 2021^[18]). From an investor perspective, scale is equally critical: larger, co-ordinated investment approaches improve cost efficiency, achieve material relevance for large portfolios, and align more readily with institutional governance, risk management, and capital-deployment requirements.

Landscape approaches aim to address scale mismatches by shifting from fragmented, project-based investments toward co-ordinated territorial strategies aligned with shared ecological, social and economic objectives (WWF, Conservation Capital, Sustainable Finance Coalition, 2025^[19]). By anchoring multiple projects within a common framework, landscape approaches can reduce duplication, diversify risk, and generate cumulative impacts that exceed those of isolated interventions (Dudley et al., 2025^[20]; WWF, 2025^[21]). They can also strengthen co-ordination among stakeholders and help mitigate social, governance and reputational risks through more integrated planning and implementation (Bertels, Lear and Gutierrez, 2023^[22]).

A core feature of landscape approaches is the development of a shared vision and collaborative governance arrangements, typically involving governments, private sector actors, local communities and civil society organisations (Dudley et al., 2025^[20]). These approaches can strengthen co-ordination across stakeholders, improve land-use planning and align incentives across sectors, helping to manage multiple and sometimes competing objectives (Gray et al., 2016^[23]).

Although landscape approaches are attracting increasing policy and investor attention, empirical evidence on their effectiveness remains relatively limited and context-specific. Co-ordinating multiple stakeholders across large territories is governance-intensive, and the evidence base on effectiveness remains limited. The complexity of risk allocation, impact measurement across heterogeneous landscapes and the management of competing land-use objectives are persistent difficulties – illustrated even by well-resourced initiatives such as Commonland's work in southern Spain (Box 4.2). These challenges are more acute in lower-income contexts where governance capacity and data infrastructure are weaker. Governments and investors should therefore treat landscape approaches as a promising but demanding model that requires sustained investment in governance and project preparation, rather than a ready-made solution to scale constraints.

For private investors, landscape-level approaches may help manage climate- and nature-related risks across supply chains and support more stable and diversified investment opportunities (Bertels, Lear and Gutierrez, 2023^[22]; Dudley et al., 2025^[20]). Furthermore, securing social legitimacy and local ownership through meaningful engagement with local stakeholders is critical to reducing implementation risks, supporting long-term stewardship, and underpinning the durability and credibility of biodiversity investments (O'Donohoe and Sheenan, 2025^[24]; Hull, 2025^[25]; Queru, 2025^[9]). While still maturing, landscape-level finance could help deliver integrated biodiversity outcomes at scale, provided governance frameworks, data systems and investment structures are sufficiently robust.

Box 4.2. Commonland's landscape-scale approach

The Commonland initiative illustrates a long-term, landscape-scale approach that integrates ecological, social and economic objectives. Its “4 Returns Framework” – covering inspiration, social, natural and financial capital – guides restoration and development over multi-decadal timescales, recognising that ecological restoration, livelihoods and investment viability are mutually reinforcing.

One of the most advanced European applications is in the Altiplano Estepario of southern Spain, a semi-arid region of around one million hectares affected by desertification, biodiversity loss and rural depopulation. Working with farmers, co-operatives, businesses and public authorities, the initiative supports regenerative land use alongside local economic development through activities such as regenerative almond and olive production, restoration of ecological corridors, improved soil and water management, and development of value chains that capture sustainability-related price premiums.

A key strength of the landscape approach is its ability to co-ordinate action across multiple landholders and align incentives within a defined territory. By addressing ecological and economic challenges at scale, it can reduce fragmentation, support collective action and integrate biodiversity objectives into productive land use. While still evolving, the initiative demonstrates how landscape-scale strategies can help attract blended and patient capital by building investable project pipelines and reducing risks over time, while also highlighting ongoing challenges related to governance complexity, risk allocation and consistent measurement of biodiversity outcomes across large and heterogeneous landscapes.

Source: (Dudley et al., 2025^[20]); (Commonland et al., 2024^[26]), The 4 Returns Framework in practice: a guidebook for holistic landscape restoration. Amsterdam, the Netherlands.

The role of technical assistance

Technical assistance is a critical enabler of investment readiness, particularly in the early stages of project development. It supports feasibility analysis, business planning, financial modelling, and the development of monitoring, reporting and verification systems (Fabre, 2025^[27]; Queru, 2025^[9]; Van Raalte and Ranger, 2023^[10]). It also strengthens local capacity and ensures alignment with regulatory and market standards. Without this foundation, environmentally valuable initiatives frequently fail to reach investability thresholds.

Beyond early-stage project preparation, technical assistance also plays an important role in supporting scalability by bridging the gap between project design and investment. As projects mature, the focus of support typically shifts towards financial structuring, standardisation and aggregation, enabling projects to meet the requirements of different investor types and facilitating replication and portfolio development. In biodiversity finance, technical assistance often addresses market-creation challenges rather than solely project-level deficiencies. This includes developing regulatory frameworks, improving biodiversity data systems, establishing methodologies and building institutional capacity among public authorities and financial intermediaries.

Many nature-focused funds and investment platforms operate dedicated, typically grant-funded, technical assistance facilities that provide pre- and post-investment support to projects (Van Raalte and Ranger, 2023^[10]; CPI, 2024^[28]). These facilities often operate alongside but remain separate from investment capital. In doing so, they help strengthen project viability, improve impact measurement, and reduce transaction costs and perceived risks without diluting private returns (Convergence, 2022^[29]). Some facilities focus primarily on upstream pipeline development. For example, the UK Natural Environment Investment Readiness Fund, which facilitates project development, readying projects for private investment (Green Finance Institute, 2026^[30]). An evaluation of its first two rounds found that it delivered

good value for money and generated lessons for the design of future nature finance initiatives (ECORYS, 2024^[31]).

Public institutions – such as environmental agencies and, in the context of development finance, bilateral donors and multilateral development banks – play an important role in financing and co-ordinating technical assistance alongside private investors and specialised intermediaries (see also next section). Capacity development should seek to be durable, extending beyond an individual project to create individuals, institutions and systems that can support development of a pipeline of projects. Forthcoming OECD research will examine the catalytic role of grants in providing technical assistance to mobilise private sector finance and investment in developing countries (OECD, Forthcoming^[331]). By addressing capacity constraints at both project and financing levels, well-targeted technical assistance can complement financial instruments to support the development of a scalable pipeline of investable biodiversity projects.

4.2.2. Financing models to enable scale

Even well-designed projects with clearly defined revenue streams struggle to achieve scale without financing models aligned with investor requirements. Institutional capital typically demands scale, liquidity, standardisation, and predictable risk-return profiles, which are conditions that biodiversity projects rarely meet under current market structures (Flammer, Giroux and Heal, 2025^[32]). Addressing these constraints requires financing structures that reduce transaction costs, improve risk-return characteristics and enable larger capital flows, requiring co-ordination across government, business and financial institutions.

Blended finance

Blended finance is among the most prominent mechanisms used to support the scaling of biodiversity investments. Blended structures deploy concessional finance – typically provided by governments, development finance institutions or private philanthropy – to improve the risk-adjusted returns of biodiversity investments and mobilise private capital. This concessional support may take the form of pure grants and technical assistance, as well as concessional capital and risk-sharing instruments embedded within investment structures (see examples in Box 4.3).

Evidence suggests that projects with higher expected returns are more likely to attract purely private capital but are typically smaller in scale and deliver more limited biodiversity impacts. By contrast, larger-scale projects with more ambitious biodiversity outcomes are more commonly financed through blended structures (Flammer, Giroux and Heal, 2023^[33]) (Flammer, Giroux and Heal, 2025^[32]). Although these projects typically offer lower expected returns, they also exhibit lower risk, suggesting that blending can improve the risk-return trade-off and expand the pool of participating investors – pointing not to a lack of opportunity, but to the need for more effective structuring frameworks that can align large-scale biodiversity outcomes with investor requirements.

Box 4.3. Blended finance structures for biodiversity: selected case studies

Forestry and Climate Change Fund (FCCF): The FCCF illustrates how blended finance can be applied to forestry value chains and smaller-scale assets. Supported by public investors including the Government of Luxembourg, the fund uses a tiered share structure in which public capital is deployed through junior shares that absorb first losses. This structure enables participation by institutional and private investors in sustainable forest management and restoration activities. By targeting small and medium-sized enterprises and investing in local processing and value chains, the fund addresses structural barriers associated with long investment horizons, fragmented project pipelines and limited access to finance in the forestry sector.

Global Fund for Coral Reefs (GFCR): The GFCR a comprehensive example of blended finance applied to marine ecosystems. Established as a public–private partnership involving actors such as the Green Climate Fund, the United Nations Development Programme and private investment partners, the fund combines a grant-based window with a commercial investment vehicle. The Green Climate Fund has committed approximately USD 125 million in junior equity, which absorbs early losses and helps de-risk investments in reef-positive businesses. The overall structure is designed to mobilise significantly larger volumes of private capital into a sector characterised by high uncertainty and limited track record.

Land Degradation Neutrality Fund (LDNF): The LDNF applies a layered capital structure to support sustainable land-use and restoration projects. Managed by Mirova with support from the United Nations Convention to Combat Desertification and other public and development finance partners, the fund mobilises capital from both public and private investors. Public and development finance institutions provide a junior tranche that absorbs initial losses, enabling private investors to participate in higher-risk projects. The fund has raised several hundred million euros and invests in projects that combine environmental restoration with revenue-generating activities in agriculture, forestry and land management.

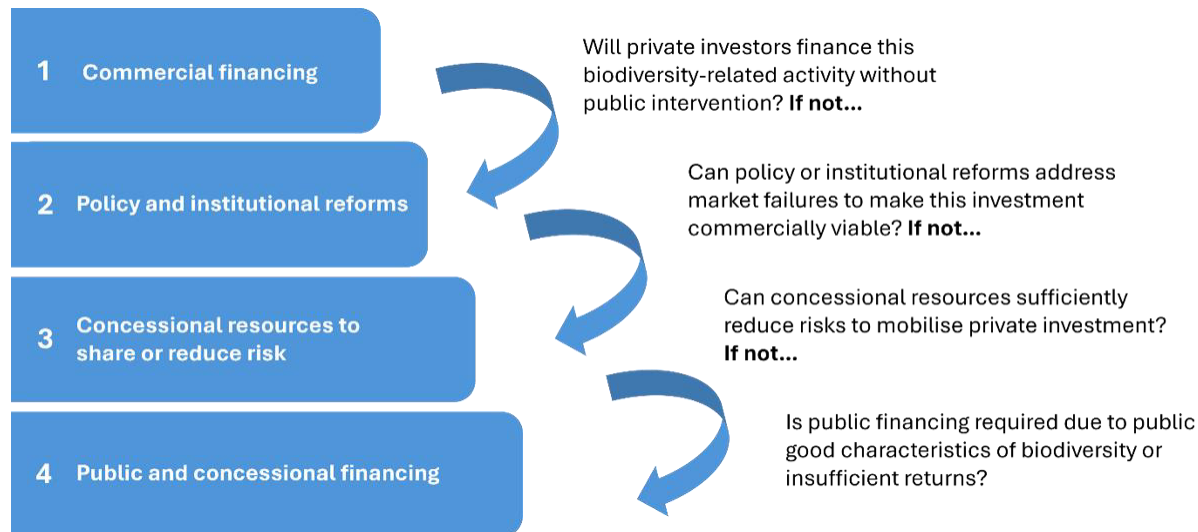
The National Green Fund (Nationaal Groenfonds): The National Green Fund in the Netherlands illustrates a form of domestic blended finance, combining public catalytic capital and private investment to support biodiversity and broader environmental objectives. Supported by Dutch public funding and policy mandates, the fund provides a range of financing instruments, including subordinated loans, guarantees and revolving finance, for projects related to nature restoration, sustainable agriculture, green real estate and biodiversity-compatible infrastructure. By improving project bankability and reducing perceived investment risks, these instruments help crowd in commercial bank lending and private capital into projects that generate environmental benefits alongside viable revenue streams. The model illustrates how blended finance approaches can be applied domestically without reliance on international development finance institutions.

Source: (GCF, 2022^[34]), GCF partnership with Pegasus set to protect coral reefs across 17 countries; (UNDP, 2026^[35]) Global Fund For Coral Reefs: About; (IDH and Mirova, 2025^[36]; UNCCD, 2026^[37]) Land Degradation Neutrality Fund; FCCF - Investing in business models for the restoration of tropical forests; (Groenfonds, 2026^[38]), The National Green Fund, Nationaal Groenfonds.

A central policy challenge is ensuring that concessional finance is used in a targeted and efficient manner. Public resources should address clearly identified market failures and deliver measurable additionality. The public sector should avoid situations in which risks are largely socialised while returns accrue disproportionately to private actors (Löfqvist, Garrett and Ghazoul, 2023^[5]; Mazzucato, 2025^[39]), or where significant public support mobilises only marginal amounts of private capital, raising questions about whether those resources could have delivered greater impact through direct public investment or targeted payments to land-users. Evidence on the long-term effectiveness and additionality of blended finance in biodiversity contexts remains limited, and assessments of additionality in blended development finance are not always publicly disclosed and underlying methodologies vary across providers (OECD, 2025^[3]). This underscores the need for careful design, transparency, and robust monitoring and evaluation (Löfqvist, Garrett and Ghazoul, 2023^[5]).

In the context of blended finance, the World Bank Group's Cascade Framework (World Bank Group, 2018^[40]) offers a guiding logic for sequencing public intervention (Figure 4.1). While the framework was developed for sustainable development more generally, it can be applied to biodiversity financing – both domestic and international. The framework prioritises financing solutions by first assessing whether objectives can be achieved through commercial private finance. If not, it considers whether policy, regulatory or institutional reforms can address underlying market failures and help create demand or revenue streams for biodiversity outcomes. Where such measures are insufficient, public and concessional resources are used to share or mitigate risks, for example through guarantees or first-loss instruments, to mobilise private capital. In biodiversity contexts, however, many interventions generate public goods that are not fully monetisable, implying that sustained public finance will often remain necessary alongside efforts to crowd in private investment.

Figure 4.1. Cascade approach adapted to biodiversity finance



Source: Adaptation of World Bank Group (2018^[40]), Approach Paper "Creating Markets for Sustainable Growth and Development".

Pooled finance and investment aggregation

Pooled finance structures and co-financing arrangements play an important role in addressing co-ordination failures and mobilising capital from multiple public and private sources. By aligning investors and funding streams around shared objectives, they reduce fragmentation across programmes and jurisdictions and lower transaction costs through joint governance arrangements and common investment frameworks. Depending on their design, these structures may combine capital on commercial terms or include concessional elements, without necessarily constituting blended finance.

Within such arrangements, risk-return profiles are commonly shaped through layered capital structures that allocate risk across different investor classes. Junior or subordinated capital, including equity and, where relevant, mezzanine instruments, absorbs a greater share of early losses, improving the risk profile for senior debt and enabling broader investor participation. Governments and public financial institutions can support these structures not only through blending approaches, but also by convening participants, facilitating alignment across mandates and funding cycles, and promoting consistency with national biodiversity strategies.

Aggregation mechanisms, such as special purpose vehicles, dedicated funds and intermediary financing platforms, translate co-ordination into investable scale by bundling biodiversity projects into diversified portfolios. Aggregation reduces exposure to project-specific risks, supports the standardisation of contractual, monitoring and reporting arrangements, and enables more efficient capital deployment. By consolidating projects within a single vehicle, aggregation facilitates the practical application of layered financing approaches at portfolio level, without requiring each individual project to meet institutional scale or structuring requirements independently. However, aggregation does not eliminate underlying ecological or policy risks. Portfolios may remain exposed to correlated risks, including commodity price fluctuations, regulatory changes and climate-related shocks affecting multiple projects simultaneously. In practice, aggregation can take multiple forms, including project-level platforms, financial intermediary models and supply-chain-based approaches (see examples in Box 4.4).

Digital technologies are increasingly being explored as complementary tools to support pooled finance structures and the aggregation of biodiversity investments. Tokenisation and related digital approaches – including blockchain and artificial intelligence – can help standardise, track and manage contractual claims linked to biodiversity-related revenue streams. These technologies may also reduce minimum investment sizes and facilitate the pooling of smaller projects, such as community forestry, mangrove restoration or regenerative agriculture initiatives, into investable portfolios.

Digital tools can further strengthen monitoring, reporting and verification, helping to reduce due diligence and transaction costs across fragmented projects. Evidence from adjacent financial and environmental markets suggests that such approaches may improve verification efficiency and enable new financing structures, including tokenised bonds and digital investment platforms (Halden and Cali, 2024^[41]; Namoniuk and Matei, 2025^[42]; Yao Ge, 2025^[43]). However, their applicability depends on reliable revenue streams, robust legal and regulatory frameworks, interoperable standards and sufficient project standardisation.

Box 4.4. Pooled finance and aggregation approaches in practice

Mobilising Finance for Forests programme (MFF): MFF illustrates aggregation at the level of supply chains and landscapes. Supported by public actors including FMO, the Dutch entrepreneurial development bank, and the United Kingdom, the programme combines concessional capital, private investment and technical assistance to support sustainable forestry and deforestation-free commodity production. Operating across multiple projects and jurisdictions, MFF builds investable pipelines and reduces fragmentation. In 2024, a commitment of around USD 40 million to a Latin American reforestation vehicle (The Reforestation Fund) helped mobilise several times that amount in additional investment, illustrating the catalytic role of concessional finance.

Eco.business Fund: The eco.business Fund illustrates aggregation through financial intermediaries. Backed by public and development finance institutions, notably KfW, it mobilises blended public and private capital and channels it through local financial institutions in Latin America, the Caribbean and sub-Saharan Africa. By leveraging local banking networks, it aggregates numerous small transactions across sectors such as sustainable agriculture, forestry, fisheries, aquaculture and ecotourism – segments typically too fragmented or risky for direct institutional investment. As of 2024, the fund manages close to USD 1 billion in assets, supporting sustainable management across more than one million hectares. Its combination of risk-taking public capital, local intermediation and technical assistance helps reduce costs, mitigate risk and mainstream biodiversity-friendly land use.

African Forest Landscape Restoration Initiative (AFR100): AFR100 illustrates how aggregation can be facilitated through co-ordinated platforms rather than a single investment vehicle. It brings together governments, donors, project developers and financiers around a shared restoration agenda across multiple countries, helping organise large numbers of small and heterogeneous projects within a common framework. Through associated funding mechanisms such as TerraFund, the initiative provides grants and early-stage finance to locally led restoration projects. At the same time, AFR100 has faced criticism for including commercial tree plantation activities under a broad restoration umbrella, highlighting the importance of clear definitions, safeguards and biodiversity-sensitive project selection criteria in large-scale aggregation platforms.

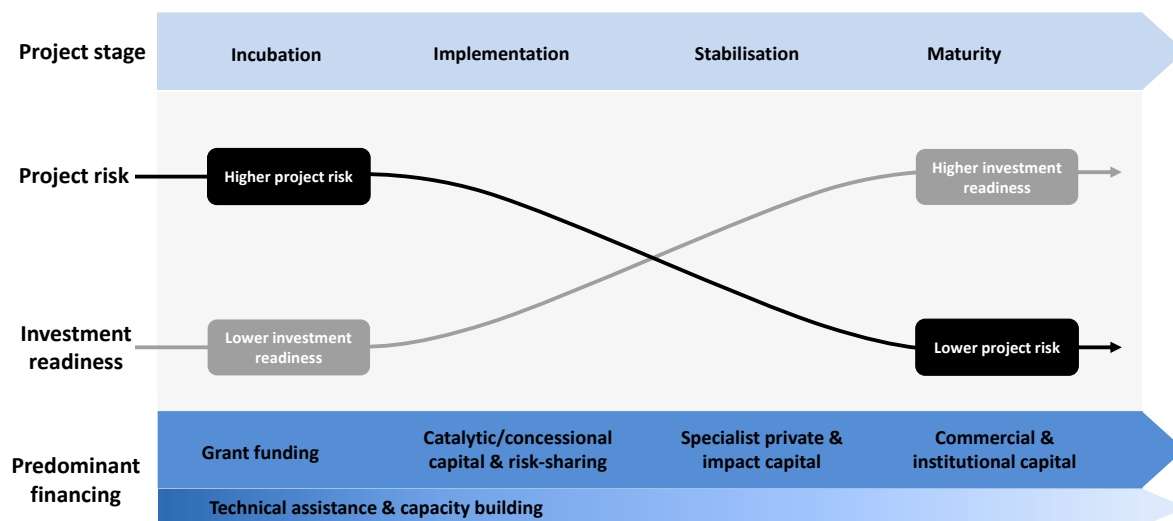
Source: (FMO, 2026^[44]), About Mobilising Finance for Forests; [About MFF - FMO](#); (FMO, 2024^[45]), Mobilising Finance for Forests Programme 2024: Performance; (Eco Business Fund, 2026^[46]), Invest in Nature www.ecobusiness.fund/en; (Finance in Motion, 2026^[47]) (Finance in Motion, 2026^[48]), Ecobusiness Fund, www.finance-in-motion.com/funds/fund/ebf; (TerraFund for AFR100, 2026^[49]), Investing in Africa's Land Restoration Champions; (AFR100, 2026^[50]), People Restoring Africa's Landscapes; (Parr, te Beest and Stevens, 2024^[51]), Conflation of reforestation with restoration is widespread.

Moving along the capital continuum

As biodiversity projects move from incubation toward market integration, the mix of instruments, financing mechanisms and participating actors must adapt to changing risk profiles, capital requirements and market conditions (Figure 4.2) (CPIC, 2023^[52]; Dudley et al., 2025^[20]). At early stages, when uncertainty is high and projects are not yet investable, public funding can play a particularly important role through grants and technical assistance, supporting project preparation, capacity building and the provision of non-monetisable public goods. As projects mature and revenue mechanisms become established some projects may become suitable for blended or commercial financing. Others may continue to require ongoing public support because the biodiversity benefits they generate cannot be fully monetised. Technical assistance, however, is often needed throughout the continuum given the persistent complexity of biodiversity investments. (CPIC, 2023^[52]).

As biodiversity finance moves from project-level structuring towards broader market development, refinancing mechanisms, secondary markets and, potentially, securitisation could further enhance scale by improving liquidity and enabling capital recycling. As track records strengthen and monitoring, reporting and verification systems mature, portfolios of biodiversity-related assets may increasingly be packaged into investable financial products. Realising this potential, however, will depend on greater standardisation, robust impact measurement, and more stable and predictable revenue streams – priorities for both policy makers and market participants. Where biodiversity investments generate public goods that cannot be monetised, public finance will remain indispensable regardless of market maturity.

Figure 4.2. The capital continuum



Source: Adapted from Capital Continuum (2025^[53]), The Capital Continuum <https://capital-continuum.com/>.

4.3. Enabling conditions for biodiversity finance

Financing instruments and structures, however well designed, will not mobilise biodiversity finance at scale in the absence of enabling conditions. These encompass the data and measurement systems that allow investors to assess risks and verify outcomes; the policy and regulatory frameworks that translate biodiversity objectives into economic incentives and investable opportunities; and the governance arrangements that co-ordinate action across actors, ministries and jurisdictions. These elements are interdependent. Measurement systems depend on governance to be mandated and funded; policy frameworks depend on data to be credible; and both depend on institutional capacity to be implemented. This section examines each in turn while recognising their mutual reinforcement.

4.3.1. Data, metrics and measurability

Biodiversity data and metrics

Standardised data and metrics are critical to mobilising finance for biodiversity, as they underpin the ability of investors, financial institutions and policy makers to assess risks, measure performance and compare investment opportunities. In the absence of consistent and credible data, biodiversity-related investments are often perceived as opaque, high-risk and difficult to evaluate, limiting capital flows. Unlike climate finance, where widely accepted indicators such as greenhouse gas emissions provide a relatively clear common reference point, biodiversity outcomes are inherently multidimensional, location-specific and

context-dependent. Improving the availability and standardisation of biodiversity data and metrics is therefore a necessary condition for improving the investability of nature-related activities.

The resulting challenge is not only technical but also normative. Decisions regarding which indicators to prioritise can influence investment allocation, project design and perceptions of success. Policy makers therefore need to balance comparability with ecological relevance and ensure that simplified metrics do not obscure important biodiversity trade-offs.

Importantly, standardisation does not imply a single universal biodiversity metric. Rather, it involves common definitions, minimum data standards and interoperable frameworks that allow comparison across projects and portfolios while retaining sensitivity to local ecological conditions. Clear and credible methodologies for monitoring, reporting and verification are also essential to ensure confidence in reported outcomes and to reduce concerns around greenwashing or impact inflation.

State of nature measurement supports four main use cases for corporates and financial institutions: assessment of nature-related dependencies, impacts risks and opportunities; disclosure under emerging sustainability reporting frameworks; transition planning aligned with the KMGBF; and target setting and tracking. International alignment further reduces fragmentation, lowers reporting burdens for firms operating across jurisdictions, and supports cross-border investment.

Data, metrics and measurability are also critical to evaluate whether finance is delivering on its intended biodiversity objectives. At the policy, programme or intervention level, the most robust way to evaluate the effectiveness of instruments and mechanisms is via impact evaluation studies. Impact evaluation measures the causal effect of a specific policy, programme or intervention vis-a-vis a credible counterfactual scenario and seeks to understand the conditions under which this effect arises. Less rigorous, non-attributional approaches for monitoring effectiveness are to assess the level of input (e.g. finance), outcome (e.g. area restored) and impact (e.g. ecosystem condition and species) indicators against other benchmarks, such as historical benchmarks, other (similar) jurisdictions, or pre-determined goals or targets.

Impact evaluation studies are still not commonly applied in the field of biodiversity however, with some exceptions including PES programmes at the national or regional level (Karousakis, 2018^[54]). In the case of project-level interventions, such as with biodiversity offsets and biodiversity credits, recommended best practice is to develop dynamic counterfactual baselines (sections 3.1.3 and 3.1.5). For financial instruments such as SLBs and SLLs, the data landscape remains fragmented with inconsistent indicators (KPIs) and weak disclosure (WEF, 2025^[55]). Reliable monitoring and reporting standards, credible baselines and independent verification are key to evaluating the biodiversity performance of these instruments. Existing standards such as those developed by the ICMA, TNFD and the SBTN can be leveraged to improve this. For example, the ICMA's Sustainability-Linked Bonds Principles specify that SPTs should go beyond business-as-usual and where possible be compared to a benchmark or an external reference (ICMA, 2024^[56]).

Box 4.5. Examples of data and metrics in financial sector instruments

A wide range of data and metrics is used across financial instruments to track biodiversity-related performance. These vary by instrument type and issuer, reflecting differences in objectives, data availability and reporting standards.

Sovereign instruments: In France, the funds raised through the sovereign green bonds are used to finance projects in the State Budget that have a positive impact on the environment, such as those quantified and monitored in the French National Biodiversity Strategy 2030 (e.g. 50 K ha restored wetland by 2026, 400 new protected areas by 2027, 300 species protected by 2030).

Corporate instruments: Corporate use-of-proceeds bonds and sustainability-linked bonds (SLBs) employ a range of biodiversity-related key performance indicators (KPIs). Common metrics include hectares of land protected or restored, and the share of sustainably certified inputs. For example, in 2019, CMPC in Chile set its environmental goals relative to a 2018 baseline year, with a biodiversity goal of adding 100K ha of land for conservation and/or protection by 2030 (see Box 3.12). In Portugal, the Navigator Company, a forestry, paper and pulp producer, issued a SLB using certified wood utilisation as a KPI, with a target of achieving 80% use of certified origin wood by 2030 (compared to 61% in 2020). The biodiversity KPIs used in Klabin's SLB Framework are based on threatened species and species reintroduction (see Box 3.15).

Cross-cutting insights: While a wide range of biodiversity metrics has been developed, their practical application remains limited, pointing to a disconnect between available scientific frameworks and their use in financial markets. For example, the IFC produced a catalogue of 158 biodiversity-related metrics, yet significantly fewer are used in practice. A review of corporate bond issuances in Brazil and five global investment funds found that 33 biodiversity metrics were used in bond issuances and 32 by fund managers. This gap reflects challenges related to complexity, cost and lack of consensus, and suggests a need for greater prioritisation and standardisation. It also highlights the potential role for technical assistance in helping market participants adopt a more consistent and decision-useful set of metrics.

Source: (CMPC, 2024^[57]), CMPC's Nature Conservation and Biodiversity Strategy; (The Navigator Company, 2024^[58]), Sustainability Linked Bond Framework; (Sayn-Wittgenstein, de Mariz and Leijonhufvud, 2025^[59]), Nature Finance: Bridging Natural and Financial Capital Through Robust Impact Measurement.

Numerous guides are emerging providing recommendations on what to monitor and report, such as the IFC Biodiversity Finance metrics for impact reporting (IFC, 2024^[60]), IFC Guidelines for Blue Finance (IFC, 2025^[61]), the IDB Financing Nature: A Practitioner's Guide to Results Metrics Selection (Lacey et al., 2025^[62]) and F4B's Biodiversity Measurement Approaches for financial institutions (Finance for Biodiversity, 2025^[63]). Over time, standards bodies issuing mandatory and voluntary standards can drive convergence on KPIs, ideally using multiple KPIs for biodiversity covering ecosystem extent, condition, as well as species indicators. Building on work of the Nature Positive Initiative to co-develop and foster consensus on a small set of aligned metrics to evaluate changes in the state of nature (NPI, 2026^[64]), the TNFD is working in collaboration with the GRI and SBTN to embed the state of nature outcome metrics within frameworks and standards (TNFD, 2026^[65]).

Advances in technology are also greatly improving the ability to monitor biodiversity, while reducing the costs of doing so. Aerial imagery from satellites and drones can provide detailed information on habitat cover and land use change, and on vegetation parameters (e.g. LiDAR), while camera traps, acoustic monitoring and environmental DNA (eDNA) can provide information on fauna (Aide, 2024^[66]). In this context, government also has a critical role in supporting R&D in technology and innovation, including as it relates to biodiversity monitoring.

Biodiversity finance data

In addition to the need for more standardised data and metrics for biodiversity, more consistent and comprehensive tracking of biodiversity finance mobilised is also necessary. Identifying good practices for mobilising finance for biodiversity would, ideally, require data on the number of real economy and financial sector instruments and mechanisms in place, and how much finance each instrument or mechanism has mobilised for biodiversity. Yet data availability on finance mobilised by instrument is generally low (Box 4.6).

Box 4.6. Data availability on finance across selected instruments

Taxes and fees: Comprehensive data are available on revenue from biodiversity-relevant taxes nationally, with infrastructure in place to report and consolidate data at the international level through the OECD PINE database. These taxes generate an estimated USD 10 billion annually. However, data on whether – and to what extent – revenue is earmarked for biodiversity is significantly less comprehensive.

Biodiversity offsets: Data on biodiversity offset markets remain fragmented and often outdated; more recent estimates tend to be based on older data that is adjusted for inflation. Some exceptions exist, such as the US Wetland Compensatory Mitigation scheme, which mobilised USD 3.5 billion in 2019. Finance data are easier to collect when biodiversity offsets are implemented through centralised structures (i.e., mitigation banks and payment-in-lieu systems). More broadly, the establishment of national registries would improve transparency and allow for systematic aggregation and disclosure of finance mobilised.

Nature-based carbon credits: Total VCM transaction value in 2024 amounted to USD 535 million, with nature-based credits accounting for around 45% of transaction volume. While biodiversity is often claimed as a co-benefit, it is difficult to ascertain the proportion of projects that are beneficial for biodiversity due to general lack of biodiversity monitoring, reporting and verification.

Voluntary biodiversity credits: The voluntary biodiversity credit market remains very small and at an early stage of development. [B]loomslab has emerged as a market platform that tracks *inter alia* VBC schemes, finance and the metrics used, with sales in VBC amounting to USD 6 million as of April 2026.

Green and sustainable bonds: Bonds listing biodiversity among their use-of-proceeds accounted for approximately USD 317 billion in issuance in 2024. However, biodiversity is typically one of several eligible categories. Adjusting for multiple use-of-proceeds categories reduces the estimated biodiversity-related share to around USD 36 billion. Evidence suggests that actual allocations to biodiversity are significantly lower: one analysis found that only 3.7% of proceeds from bonds listing biodiversity (2021-22) were directed to biodiversity projects, while other estimates suggest biodiversity accounts for less than 1% of total green and sustainability bond allocations.

Biodiversity-themed equity funds: Morningstar estimates that biodiversity-themed equity funds held approximately USD 3.7 billion in assets under management (AUM) in 2024, roughly double their level three years earlier. Separately, MSCI identified 24 “pure play” biodiversity funds with USD 1.6 billion in AUM. However, AUM does not directly translate into annual investment flows, and underlying investment strategies differ. Some funds, for example, focus on managing biodiversity-related risks rather than financing biodiversity-positive activities. In addition, as most of these funds invest in listed companies, their contribution to biodiversity outcomes is indirect, relying on company-level practices and impacts rather than financing specific projects or activities.

Source: (OECD, 2025^[12]), Scaling Up Biodiversity-Positive Incentives; (EcosystemMarketplace, 2025^[67]), 2025 State of the Voluntary Carbon Market; (BloombergNEF, 2025^[68]), Biodiversity Finance Fact Book; (Environmental Finance, 2025^[69]), Environmental Finance Data: Sustainable bond issuance allocation analysis; (Bioy and Pucci, 2024^[70]), The Landscape of Biodiversity and Natural Capital Funds: An Expanding Universe of Strategies (Gangadia, 2024^[71]), Under the Canopy: Shedding Light on Biodiversity Funds.

Across real economy instruments, improvements in finance data tracking are needed in particular regarding payments for ecosystem services, biodiversity-motivated subsidies, and biodiversity offsets. Generally, governments do not request finance data (e.g. across instruments mobilising private finance or under sub-national schemes) or, if they do, the data is not necessarily consolidated and made publicly available. National registries for biodiversity offsets, for example, would be a first step in enabling the collection of finance allocated for NNL or NG biodiversity offset projects. In the case of PES, finance mobilised through government-led programmes is generally easier to track. In the case of mixed government and privately financed PES programmes, the creation of funds that pool finance from public and private sources to make payments, such as the Mexican Forest Fund and the Colombian Fund for Life and Biodiversity can facilitate the tracking of private finance contributions to PES.

Regarding financial sector instruments, governments could encourage reporting on biodiversity allocation in corporate biodiversity UoP bonds and support the development of data infrastructure platforms to collect and consolidate biodiversity finance data. In the case of the EU Green Bond (EuGB), for example - a regulated, voluntary, government-backed label (see Box 3.9), allocation reporting is legally required. Moreover, standard forms and templates have been developed to ensure consistency and comparability across reporting, and the European Securities and Markets Authority (ESMA) is responsible for supervising external reviewers of the EuGBs. Similar approaches could be envisioned specifically for biodiversity-labelled bonds. Overall, greater standardisation and machine-readability in reporting promotes transparency and comparability.

The lack of comprehensive finance data constrains policy evaluation and limits the ability of governments to assess cost-effectiveness across instruments. Improving biodiversity finance tracking is therefore not only a transparency objective but also a prerequisite for evidence-based policy making and resource allocation.

Digitalisation and biodiversity data systems

Digitalisation is playing a growing role in strengthening data, transparency and market infrastructure for biodiversity finance. Technologies such as satellite imagery, remote sensing, environmental sensors and artificial intelligence are improving biodiversity data collection and supporting more robust MRV systems. Distributed ledger technologies can complement these approaches by enhancing the traceability and integrity of environmental claims through verifiable digital records, helping to reduce information asymmetries and strengthen investor confidence (Yao Ge, 2025^[43]; Schulz and Feist, 2021^[72]).

Combined with real-time and geospatial data sources, digital tools can also improve the detection of inconsistencies, non-compliance and potential fraud in environmental markets, while supporting more transparent sustainability and ESG reporting (Kalola, Makwana and Makadiya, 2025^[73]; Oluwafemi Elias et al., 2024^[74]; Yao Ge, 2025^[43]). However, digital systems cannot substitute for robust ecological metrics, scientific baselines or effective governance frameworks. Realising the benefits of digitalisation therefore depends on complementary investments in data standards, interoperability, regulatory clarity and institutional capacity.

4.3.2. Policy, regulatory and governance frameworks for mobilising biodiversity finance

Policy and regulatory frameworks are decisive for mobilising public and private finance for biodiversity. They shape whether biodiversity outcomes can be translated into investable opportunities with predictable risk-return profiles, and whether incentives support or undermine biodiversity-positive activities. Compared to climate finance, biodiversity finance still lacks the scale of public commitment and market infrastructure needed to attract private capital. Closing this gap requires coherent frameworks spanning real economy policies, financial sector policies, and the governance arrangements that link them.

National Biodiversity Strategies and Action Plans (NBSAPs) are the primary vehicle through which countries implement the Kunming-Montreal Global Biodiversity Framework. However, they are often insufficiently integrated into fiscal policy, public investment frameworks and financial sector regulation. Strengthening this integration, so that national biodiversity priorities shape public budgets, inform investment strategies and provide a credible basis for financial instrument design, is a key priority. This could include developing methodologies and guidance to translate biodiversity commitments into measurable key performance indicators (KPIs) and outcome metrics relevant to credit and capital markets, thereby supporting the design, implementation and monitoring of financial instruments.

Effective policy frameworks encompass both real economy and financial sector policies (Table 4.1), which are mutually reinforcing. Real economy policies determine whether biodiversity outcomes generate economic value and investment opportunities, while financial sector policies influence how capital flows toward them. Without robust policy frameworks, private finance may favour low-risk, high-return projects such as monoculture plantations, neglecting high-priority restoration areas and undermining long-term sustainability outcomes (Löfqvist, Garrett and Ghazoul, 2023^[5]). Well-designed policy frameworks can instead redirect capital towards biodiversity-positive investments, support new markets.

Table 4.1. Public interventions that may contribute to mobilisation or alignment of finance for biodiversity

Real economy policies	Financial sector policies
Regulatory policies (e.g. spatial planning, standards, EIA/SEA)	Transparency and information
Economic and fiscal policies (e.g. taxes, fees, subsidies and biodiversity offsets)	Prudential policies
Government investment and consumption (e.g. green public procurement and investment)	Credit allocation
Information policies (e.g. eco-labelling; biodiversity-related disclosures; capacity building and awareness)	Monetary policies
Voluntary approaches (e.g. voluntary targets and sustainability reporting; voluntary standards and codes)	Voluntary financial-sector approaches (e.g. stewardship commitments; net-zero/nature alliances; voluntary disclosure frameworks; sustainable finance principles and standards)

Source: Authors, adapted from (OECD, 2024^[75]), OECD Review on Aligning Finance with Climate Goals, *Assessing Progress to Net Zero and Preventing Greenwashing*, <https://doi.org/10.1787/b9b7ce49-en>.

Real economy policies

Real economy policies, typically led by environment ministries, sectoral ministries and planning authorities, directly shape the activities that generate biodiversity outcomes and associated economic value. They play a critical role not only in mobilising finance, but also in reducing overall financing needs by preventing biodiversity loss in the first place and by steering economic activity toward more sustainable pathways. From an economic perspective, preventing biodiversity loss is often more cost-effective than financing subsequent restoration. Regulatory and planning instruments therefore contribute to biodiversity finance not only by creating investment opportunities, but by lowering future financing needs and reducing pressure on public budgets.

Tools such as land-use and marine spatial planning, protected areas, environmental impact assessments (including strategic environmental assessment), environmental standards and permitting regimes define acceptable uses of land and ecosystems and set binding constraints on harmful activities. When applied consistently and enforced effectively, these instruments reduce environmental degradation, limit future restoration costs and create a stable operating environment in which long-term investments can be assessed and financed. Performance and technical standards further strengthen regulatory frameworks

by clarifying what constitutes biodiversity-positive activities and supporting alignment between real economy practices and investment decisions.

Economic instruments complement regulatory approaches by influencing incentives and internalising environmental externalities. Taxes and fees can generate revenue that can be invested in biodiversity (section 3.1.1); while increasing the cost of harmful practices, helping level the playing field. Reforming environmentally harmful subsidies is particularly important. Both direct budgetary transfers and implicit support through price controls can encourage unsustainable practices and undermine investment in nature-positive alternatives (Lankoski, Nales and Valin, 2025^[76]) (OECD, 2025^[12]). Reform requires close co-ordination across finance, trade, sectoral and environment ministries to ensure it is fiscally sound, socially just and ecologically effective.

Government procurement and public investment can also shape markets by creating demand for biodiversity-positive goods and services (OECD, 2025^[77]; OECD, 2024^[78]). Integrating biodiversity criteria into public spending decisions can accelerate sustainable technology adoption, support early-stage markets and reduce long-term remediation costs. As of 2023, almost all OECD countries had green public procurement frameworks in place, although these do not necessarily address biodiversity objectives explicitly, and only 11 countries were developing methodologies to measure the environmental impacts of public procurement (OECD, 2025^[77]).

Information-based policy instruments support biodiversity-positive finance by improving transparency and shaping market behaviour. Labelling and certification systems can strengthen demand for biodiversity-friendly products, enable market differentiation and reduce information asymmetries between producers, consumers and investors (Mameno, Kubo and Shoji, 2021^[79]). Evidence suggests that such instruments can raise biodiversity performance beyond regulatory baselines in some contexts (Lehtonen et al., 2021^[80]), and contribute to positive outcomes (Campos-Cerqueira et al., 2019^[81]; Burivalova et al., 2016^[82]; Matias, Cagnacci and Rosalino, 2024^[83]). While insufficient on their own to drive systemic change (Meis-Harris et al., 2021^[84]), labelling and certification play a supporting role when aligned with public policy.

Voluntary standards for biodiversity finance and nature markets are also emerging across the real economy and financial sector, seeking to improve market integrity, comparability and investor confidence. At the global level, these include guidance such as the IFC Biodiversity Finance Reference Guide (IFC, 2023^[85]), which supports the structuring of biodiversity-related financial instruments, and the IAPB Framework for High Integrity Biodiversity Credit Markets (IAPB, 2024^[86]), which establish core principles for high-integrity biodiversity credit markets. International standard-setting has also advanced through ISO standards,² notably ISO 17620 on the design and implementation of biodiversity net gain at the project level and ISO 17298 on integrating biodiversity considerations into organisational strategy and operations, both providing globally applicable, voluntary frameworks relevant to investment decision-making and risk management. Similar approaches are also emerging at the national level. For example, in the UK, the British Standards Institution, with support from DEFRA and extensive industry engagement, launched a suite of voluntary standards for nature markets, including standards specifically addressing the supply of biodiversity benefits in nature markets and overarching principles and for nature markets.

Financial sector policies

Financial sector policies, led by finance ministries, central banks and financial regulators, influence how financial institutions assess risks and allocate capital. Biodiversity loss poses material physical, transition and liability risks through ecosystem degradation, supply chain disruption and future policy tightening, yet these risks remain underpriced in many financial decisions. Addressing this gap is essential to mobilising private finance at scale.

Transparency and information measures, such as nature-related disclosure frameworks and sustainability taxonomies, help financial institutions and investors identify biodiversity-related risks, dependencies and opportunities, improving risk pricing. Disclosure and due diligence requirements can also encourage financial institutions to incorporate biodiversity considerations into lending and investment decisions. Emerging evidence supports this role. For example, stronger nature-related policies in banks' home jurisdictions are associated with higher interest rates and longer maturities for biodiversity-exposed firms in Colombia, with effects driven primarily by disclosure and principles-based measures (D'Orazio et al., 2026^[87]).

Sustainability taxonomies are a key instrument for providing a common classification system for defining environmentally sustainable activities, improving market clarity and enabling tracking of sustainable finance flows (OECD, 2020^[88]). However, more than 50 national and regional taxonomies exist globally (Taxonomy Roadmap Initiative Partners, 2025^[89]; Zetzsche and Pflücke-Mahoux, 2026^[90]), and their proliferation can lead to fragmentation and inconsistencies, increasing complexity for financial institutions operating across jurisdictions. These challenges are compounded by the multidimensional and location-specific nature of biodiversity, as well as data gaps and difficulties in measuring impacts.

Addressing these challenges requires a pragmatic and co-ordinated approach. Recent efforts to improve coherence include the launch of the Principles for Taxonomy Interoperability in 2025, which aim to enhance alignment across frameworks while allowing for jurisdictional flexibility (Taxonomy Roadmap Initiative Partners, 2025^[89]). Priorities going forward include improving interoperability across taxonomies, ensuring that classification systems remain decision-useful and adaptable to different ecological and policy contexts, and improving co-ordination between finance and environment authorities. When designed effectively, taxonomies can help bridge real economy activities and financial decision-making, supporting more consistent capital allocation and improving alignment with biodiversity objectives. Platforms such as the Luxembourg Green Exchange can complement taxonomies by enhancing transparency, standardising disclosures and facilitating investor access to taxonomy-aligned instruments (Box 4.7).

Prudential and supervisory policies can further embed biodiversity considerations within the financial system. Supervisory expectations can encourage financial institutions to integrate nature-related risks into governance, risk management and internal controls, including through scenario analysis and stress testing. Although prudential approaches are still evolving, integrating biodiversity-related risks into existing supervisory practices could strengthen financial resilience and systemic awareness without prescribing asset allocation. Important methodological challenges remain regarding the measurement, transmission and time horizon of biodiversity-related financial risks. Policy makers therefore need to balance efforts to improve risk management with the current limitations of evidence and data. Monetary authorities may also influence financing conditions indirectly through broader policy settings that shape long-term investment behaviour.

Box 4.7. Luxembourg Green Exchange

Launched in 2016 by the Luxembourg Stock Exchange as the world's first dedicated sustainable finance platform, the Luxembourg Green Exchange enhances transparency and visibility for sustainable instruments such as green, social, sustainability and sustainability-linked bonds, as well as gender-focused bonds and EU Taxonomy-aligned funds. By applying eligibility criteria, requiring pre-issuance external reviews and ongoing reporting, LGX helps direct capital towards credible environmental outcomes, including climate resilience, biodiversity protection and ecosystem restoration. As of April 2026, more than EUR 1.3 trillion had been issued through LGX-listed securities, including over 2 400 labelled bonds.

Supported by its LGX Academy, DataHub and advisory services, the platform provides issuers with technical guidance and investors with standardised, accessible documentation. This structured and transparent approach contributes to mobilising private finance towards sustainable development objectives, including biodiversity, by reducing information asymmetries and strengthening investor confidence.

Source: (LUXSE, 2026^[91]), Luxembourg Green Exchange.

Policy co-ordination and governance

Strong alignment between real economy and financial sector policies is essential. Real economy policies shape demand, revenue streams and risk profiles for biodiversity investments, while financial policies enable capital to flow efficiently. Weaknesses in either domain can constrain outcomes: strong disclosure requirements will have limited effect if biodiversity-positive activities lack viable business models, while well-designed incentives may fail if financial institutions are not equipped to assess or manage biodiversity-related risks. Co-ordinated policy action across environment and finance ministries is therefore critical.

Effective governance arrangements are central to co-ordinating fiscal, financial and environmental policies. Finance ministries play a key stewardship role, ensuring macroeconomic coherence and efficient allocation of capital. Environment ministries, in turn, set biodiversity objectives and safeguard ecological integrity. Central co-ordinating bodies can support coherence by reconciling trade-offs, aligning timelines and monitoring progress.

Given the diversity of actors involved, dedicated co-ordination mechanisms and supporting market infrastructure are often needed to operationalise them and reduce transaction costs. Multi-stakeholder platforms, public-private partnerships and landscape-level governance arrangements can facilitate dialogue, align incentives and co-ordinate action across sectors and jurisdictions. Examples include the Tropical Forest Alliance and jurisdictional programmes under the BioCarbon Fund Initiative for Sustainable Forest Landscapes.

National project platforms, accelerators and matchmaking mechanisms can strengthen links between investable project pipelines and finance by improving visibility, standardising information and project eligibility, and enabling project aggregation. Examples include the UK's Natural Environment Investment Readiness Fund (UK), AFR100, South Africa's Biodiversity Sector Investment Portal and FONAFIFO. When aligned with national biodiversity priorities, these mechanisms can reduce fragmentation and enable more efficient investor engagement.

Transparency, accountability and the rule of law are essential for investor confidence. Clear property rights and tenure arrangements, predictable permitting and effective dispute resolution reduce regulatory and political risks, particularly in land- and resource-based sectors. Robust monitoring, reporting and

verification systems are needed to track biodiversity outcomes. Public registries can further enhance transparency and market efficiency by reducing information asymmetries and supporting due diligence. Transparent public financial management and anti-corruption measures also strengthen the credibility of public interventions.

Finally, policy makers must remain realistic about the limits of private finance. Many biodiversity investments generate public goods whose benefits cannot be fully monetised. In such cases, sustained public funding will remain indispensable. The objective of mobilising private finance is not to replace public action, but to increase the volume of finance flowing towards biodiversity objectives. With coherent, stable and well-aligned policy and regulatory frameworks, governments can reduce risks, improve returns and enable private finance to contribute at scale.

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Notes

¹ Securitisation is a financial technique in which predictable future cash flows, such as fees, receivables or loan repayments, are pooled and transformed into tradable securities that are sold to investors. Investors are repaid from the cash flows generated by the underlying assets, allowing future revenues to be leveraged to raise capital upfront.

² ISO has identified 549 relevant standards across 94 technical committees that support various aspects of the GBF's Global Targets. <https://www.iso.org/biodiversity>.

Mobilising Public and Private Finance for Biodiversity

Good Practices in Unlocking Capital for Nature

Safeguarding the natural systems on which economies and societies depend requires mobilising public and private biodiversity finance at scale. This report provides a practical reference for policy makers, financial institutions and conservation practitioners seeking to unlock and scale biodiversity finance. It maps and assesses key biodiversity finance instruments and mechanisms, examining their current use and potential to advance biodiversity objectives. The report also explores how different instruments interact and complement one another, and how real-economy and financial-sector approaches can work together to direct capital towards biodiversity outcomes. In addition, it examines the broader conditions that influence the scale and effectiveness of biodiversity finance, including coherent policy and regulatory frameworks, robust biodiversity data and metrics, and investable project pipelines. By combining a detailed assessment of financing options with an analysis of their enabling factors, the report offers actionable recommendations to strengthen the design, uptake and impact of biodiversity finance instruments and mechanisms.



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