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Nature markets: how can credits and shares provide durable, additional finance?

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Executive summary

NATURAL ECOSYSTEMS ARE DECLINING rapidly, ultimately threatening economies, livelihoods and climate stability. The public funding available to protect and restore nature is far below what is needed to maintain healthy, biodiverse ecosystems that provide water, soil, pollination and other essential services. Interest is growing in nature markets as a way to bring in complementary private finance. If tradable financial instruments could represent verifiable ecological improvements, they could channel investment to high-impact conservation efforts and reward land stewards.

FOR NATURE MARKETS to develop, the assets traded in them need to be underpinned by scientific rigour, long-term durability, transparent governance and equitable benefit-sharing on the supply side, along with the potential for mandates for long-term investment to increase demand. The European Union should establish the right policy and regulatory framework to align markets with environmental policy objectives.

THIS POLICY BRIEF offers guidance on how to design nature credits and shares that deliver real and lasting value for nature, taking lessons from carbon markets and nature credit pilot schemes. Through its 'Roadmap towards Nature Credits', the EU should prioritise establishment of consistent standards on what a nature credit or share represents, how it is measured and whether it delivers additional ecological benefits. The EU should also explore how to reduce transaction costs, set clear rules for offsets and avoid them transferring ecological harm, encourage the development and application of outcome-based metrics, and foster new sources of demand from sustainable finance, especially risk-reduction strategies and long-term investments.

HOWEVER, PRIVATE FINANCE is unlikely to reach sufficient scale to supplant public funding, because financial returns on nature projects are low, and the main drivers of demand are likely to be risk-reduction strategies and greening of long-term investment portfolios. Therefore, new financial instruments should not be a reason to reduce funds for nature in the EU, national or local budgets. Moreover, the current scale of private finance is dwarfed by nature-harming subsidies, which must be eliminated to achieve a transition to a nature-positive economy.

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1 Introduction

The rapid deterioration of natural ecosystems is threatening economies, livelihoods and climate stability. The public funding available to protect and restore nature is far below what is needed to maintain healthy, biodiverse ecosystems that provide clean water, soil, pollination, carbon sequestration and other essential services for life on earth.

Biodiversity loss is a classic collective-action problem: the risks are widely distributed, but the capacity and willingness to address them is fragmented

Biodiversity loss is a classic collective-action problem: the risks are widely distributed, but the capacity to address them is fragmented. Firms may recognise their exposure to biodiversity-related risks, particularly through vulnerable supply chains, but often lack incentives to invest in systemic solutions (BCA, 2024). To provide this motivation, 'nature markets' could be developed to put an explicit value on ecosystem services and create financial instruments, such as credits and shares, to finance projects that support the provision and conservation of nature's essential services. Such projects could be issued by governments and public institutions, private landowners or NGOs.

If designed well, nature markets could improve how companies and financial institutions value and engage with nature. Nature credits and shares could trigger additional private finance for the protection and restoration of ecosystems. These funds would complement government and institutional efforts, even if they are unlikely to supplant the need for public money.

Without careful governance, however, nature markets could foster greenwashing, erode public trust and deliver little ecological benefit. Lessons should be learned from carbon credit markets, where credit schemes of very low credibility emerged, especially those based on claims of avoided emissions. This undermined the reputation of reliable credits that delivered biodiversity co-benefits, and shows the need for rigorous standards and verification mechanisms (Trencher *et al*, 2024).

Moreover, putting a price on nature does not necessarily result in making money from nature. Nature-restoration projects funded by credits and shares are not likely to produce significant financial returns, and are rather intended to generate nature and climate benefits such as increased biodiversity, clean water and carbon sequestration. Demand for nature credits and shares is therefore unlikely to come from investors seeking financial returns; rather, buyers will have philanthropic or reputational motivations, or they will want nature-positive assets to reduce the biodiversity and/or climate risk to their businesses, or to balance their investment portfolios. Consequently, the ultimate size of nature markets will depend on whether more investment can be encouraged or prompted by tax incentives or regulation that favours the holding of nature-positive assets as business and societal risk-reduction policies.

The inherent limits to what markets can achieve in nature conservation and restoration should also be recognised. Biodiversity is a complex public good (non-rival and non-excludable), which makes it difficult for markets to account adequately for the full scope of its value. Nature markets may also have unforeseen consequences, by crowding out public funding or displacing positive behaviours, including people's willingness to engage in collective action and civic duty to protect nature or to prevent harm (Cinner *et al*, 2020).

This policy brief explores how nature markets could be designed in the European Union to support conservation and restoration by bringing in more private finance, while ensuring integrity, equity and long-term ecological benefits. It discusses the failings of low-integrity carbon-credit schemes and outlines principles for developing nature credits. We focus mainly on how nature markets could develop within the EU, but the principles are also relevant for international funding of conservation and restoration in other regions. We also explore a new model for nature shares. While not a silver bullet, new financial tools could complement public funding and accelerate the transition to a nature-positive economy, if designed in a way that attracts investors and generates measurable environmental benefits.

2 Why nature matters for the economy, but economic actors rarely pay for it

By 'nature,' we refer to the living ecosystems that support human life and economic development. Clean air and water, food production, climate regulation, protection from natural disasters and other ecosystem services are the foundation of healthy societies and resilient economies. A central feature of healthy ecosystems is biodiversity[1], which underpins their resilience and functioning and thus all ecosystem services.

Globally, the costs of nature loss are extremely high. Ranger *et al* (2023) estimated the annual economic toll of nature degradation at $5 trillion. According to IPBES (2024), more than half of the world's GDP – over $50 trillion – is moderately to highly dependent on nature's services. Other estimates put the annual value of ecosystem services at over $150 trillion per year, more than twice the size of global GDP (Kurth *et al*, 2021). Industries across all sectors depend at least to some degree on nature (WEF 2020); moreover, loss of ecosystems would at some point stop all economic activity (Grabbe *et al*, 2025a).

Even though it is crucial for life, economic actors typically pay little for the services nature provides, and nature is in decline worldwide because of land use change, direct exploitation, climate change, pollution and invasive alien species (IPBES 2024). If no action is taken, as much as 46 million hectares of natural land could be lost by 2030, with global GDP falling by up to $255 billion (World Bank, 2021). The collapse of services such as wild pollination, marine fisheries and timber from native forests could lead to a $2.7 trillion drop in GDP globally in 2030 and a contraction of 0.7 percent in Europe and Central Asia (World Bank, 2021).

Despite the EU's wealth, its nature is in alarming decline, with 81 percent of EU habitats in poor condition, and up to 70 percent of soils classified as unhealthy (EEA, 2020). Severely eroded croplands alone contribute to an estimated annual loss of €1.25 billion in agricultural productivity. Species are also under threat: nearly 40 percent of bird species protected under the EU Birds and Habitats Directives have a poor or bad conservation status (EEA, 2020). One in three bee and butterfly species is in decline, with one in ten facing extinction risk[2].

Further environmental damage would have serious consequences for the European economy. The European Commission has estimated that the absence of insect pollination alone would lead to a 25 percent to 32 percent reduction in total crop production and loss of €5 billion in agricultural value. About 75 percent of all corporate loan exposures in the euro area depend strongly on at least one ecosystem service, and loan portfolios may be significantly affected if nature degradation continues its current trend, with greater vulnerabilities concentrated in certain regions and economic sectors (Boldrini *et al*, 2023).

1 Biodiversity is defined as *"the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and including diversity within species, between species and of ecosystems,"* in the United Nations Convention on Biological Diversity, https://www.cbd.int/youth/biodiversity.

2 See European Commission factsheet, 'Nature Restoration Law for people, climate and planet,' 22 June 2022, https://ec.europa.eu/commission/presscorner/api/files/attachment/872899/Factsheet%20on%20Nature%20Restoration%20Law.pdf.

3 A yawning chasm: financing needs for biodiversity goals

Many countries have recognised the urgent need to halt and reverse nature loss, and have set targets to do so. At the COP15 biodiversity summit in 2022[3], 196 countries adopted the Kunming-Montreal Global Biodiversity Framework (GBF), which sets the target of reversing biodiversity loss by 2030. To do this, the GBF calls for an additional $700 billion per year, including $500 billion annually from the elimination or reform of harmful subsidies, and $200 billion from governments, the private sector and innovative mechanisms such as biodiversity credits, payment for ecosystem services and green bonds (CBD, 2022).

So far, these goals are nowhere near to being achieved. Global biodiversity spending stands at about $154 billion per year, leaving a financing gap of about $577 billion annually[4]. At the Cali Biodiversity Summit (COP16) in 2024[5], no agreement was reached on how to mobilise these resources. Several developed economies, including the EU, Japan and Canada blocked a proposal for a new biodiversity fund. Although pledges to the GBF Fund nearly doubled in 2024, they totalled only $396 million, a fraction of what is required (CBD, 2024).

In Europe, the financing gap is also significant. The EU has set goals to halt biodiversity loss and restore ecosystems by 2030. The EU Biodiversity Strategy for 2030 lists 104 actions, including the now-adopted Nature Restoration Law (NRL, Regulation (EU) 2024/1991), which sets targets to protect and restore at least 20 percent of the EU's land and sea by 2030 and all degraded ecosystems by 2050 (European Commission, 2020). According to Nesbit *et al* (2022), €48.15 billion annually[6], coming from EU and national budgets, is needed between 2021 and 2030 to achieve these goals.

So far, this level of spending has not materialised. Within the EU's 2021-2027 budget cycle (the Multiannual Financial Framework, MFF), EU-level instruments are expected to contribute €15.22 billion per year, with national governments contributing €13.87 billion. While this marks a modest increase from 2014–2020 (estimated by the Commission at €24 billion per year), it is still insufficient to meet the EU Biodiversity Strategy's goals, leaving an average annual shortfall of €18.69 billion from 2021 to 2030 (Nesbit *et al*, 2022) in all spending related to biodiversity, not just the funds specifically allocated to implementing the EU Biodiversity Strategy. Furthermore, the EU does not assess the effectiveness of this spending in addressing biodiversity outcomes, likely leading to underestimation of the true scale of the financing gap. For instance, the European Commission's Environmental Implementation Review (European Commission, 2022) estimated a further investment gap of €21.5 billion per year for biodiversity and ecosystems objectives.

EU biodiversity funding looks likely to decline further in the next Multiannual Financial Framework

EU biodiversity funding looks likely to decline further in the next MFF (2028-2034). The way progress towards biodiversity targets is measured and enforced could also change. Greater flexibility for EU governments to tailor their Common Agricultural Policy (CAP) strategic plans to local needs could see reduced EU-level oversight, potentially allowing national governments to use funds previously earmarked for environmental objectives, including

3 See https://www.cbd.int/conferences/2021-2022.

4 See United Nations article of 2 November 2024, 'Biodiversity COP 16: Important Agreement Reached Towards Goal of "Making Peace with Nature"', https://www.un.org/sustainabledevelopment/blog/2024/11/biodiversity-cop-16-important-agreement-reached-towards-goal-of-making-peace-with-nature-2/.

5 See https://www.cbd.int/conferences/2024.

6 Baseline expenditure amounts to approximately €29 billion per year, currently allocated to biodiversity-related activities across the EU. To fully implement the EU Biodiversity Strategy for 2030, an additional €19 billion annually is needed. This includes, for example, about €10.2 billion per year to establish a larger EU-wide network of protected land and sea areas, and further investments to support the EU Nature Restoration Plan.

biodiversity, for other goals instead. Already the EU's framework for 'climate mainstreaming' suffers from design flaws and complexity, risks greenwashing and does not detect harmful activities (Darvas and Sekut 2025), and nature funding is often deprioritised in favour of economic goals (WWF *et al*, 2024).

The redirection of harmful subsidies could be as, or more, important as mobilising new resources. Harmful subsidies, particularly in agriculture, fisheries and transport, amount to €48 billion annually in the EU (WWF, 2024). If even a portion of these funds were reallocated toward nature-positive actions, the EU could potentially close the €18 billion annual financing gap without increasing total public expenditure.

At national level, the NRL gives EU governments considerable flexibility in implementation, so the levels of funding they allocate could vary greatly depending on whether they prioritise least-cost restoration, maximising carbon sequestration or protecting a wide range of ecosystems (Grabbe *et al*, 2025b). Private finance to complement public funding is especially important in countries where much of the land requiring restoration is privately owned.

4 The role of nature markets

Scaling up nature markets could bring in private money for biodiversity by allowing the issuance and trading of financial instruments based on nature-positive activities. So far, there is a nascent market in nature credits and a proposal for a new asset class of nature shares (section 5).

Nature credits are tradable certificates that represent verified, measurable and lasting positive outcomes for nature, such as the restoration of degraded habitats or the protection of endangered species (BCA, 2024). Such credits have been used to finance a range of nature-positive outcomes, such as restoring forests, mangroves and wetlands, and carbon sequestration. Credits to fund biodiversity projects are especially important because biodiversity is less likely to attract purely market-driven funding than schemes for water provision or carbon storage. Biodiversity also has particular measurement challenges.

Nature credits can help to mobilise private finance to complement public sources by linking conservation and restoration projects with businesses and investors that are seeking to contribute to environmental goals or strengthen the resilience of their supply chains (Antonelli *et al*, 2024). For example, they can fund the opportunity cost of maintaining land as a natural reserve rather than converting it to agriculture or clear-cutting of forests. Credits also offer a structured way for companies to recognise and support the ecosystem services they rely on. Credits can provide a framework to include ecological considerations into economic decision-making and elevate the role of local communities and land stewards in protecting biodiversity (IAPB, 2024).

The European Commission on 7 July 2025 issued a 'Roadmap towards Nature Credits' that it intends to develop over the course of 2025–2027 (European Commission, 2025). An EU-level nature markets framework would be helpful in establishing effective governance of both the benefits for nature resulting from the markets, and also the financial transactions. The development of effective nature markets must overcome significant ecological and technical complexities. Current market mechanisms face serious challenges, including weak incentives, unclear standards and low trust among participants (Cantillon and Slechten, 2024). If nature credits lack rigorous standards and verification mechanisms, they risk repeating the failures observed in carbon markets, where reputational motivations led to low-quality credits with limited environmental benefits (Trencher *et al*, 2024).

So far, the size and scope of nature markets is very small and their potential scale is under-researched

So far, the size and scope of nature markets is very small and their potential scale is under-researched. The total volume of transactions in nature credits was estimated to be below $1 million in 2024 (Bromley, 2024). WEF and McKinsey (2023) estimated the potential

for this market in different scenarios. In a more cautious scenario, it could reach $760 million in 2030 and $6 billion by 2050. In a *"transformational"* scenario, strong policies, shifting public attitudes and increased pressure on companies could drive near-universal adoption of nature-positive targets, raising demand for biodiversity credits to $7 billion per year by 2030 and $180 billion by 2050. However, these projections depend heavily on market development, regulatory clarity and investor confidence.

For nature markets to scale up, several enabling conditions must be met, which we detail in sections 4.1 to 4.4.

4.1 Additionality

Without demonstrable additionality, credits merely reallocate funds between existing conservation efforts

Nature credits must respect the principle of additionality: that credited outcomes would not have occurred without the intervention. Without demonstrable additionality, credits merely reallocate funds between existing conservation efforts, rather than create new sources of funding (BCA, 2024; zu Ermgassen *et al*, 2025). Additionality must be both qualitative and quantitative and should account for regional and institutional variations in baseline scenarios. To safeguard additionality, markets should assume non-additionality by default, with credits issued only after outcomes have been demonstrated relative to an unbiased counterfactual (zu Ermgassen *et al*, 2025). While projected additionality may be acceptable in early stages, clear evidence must support the likelihood of both occurrence and impact. Allowing non-additional units into the market puts downward pressure on prices, threatening the viability of impactful projects and undermining market integrity.

However, requirements for nature credits to always be based on strict additionality can be problematic, risking exclusion of long-standing conservation efforts and penalising those who have already adopted good practices. Pioneers might be left unrewarded while only new interventions qualify for funding. Additionality also poses a challenge for the long-term recognition of restoration outcomes: once a project is completed, continued stewardship is vital but may no longer be considered 'additional' in the technical sense, undermining the project's long-term financial viability.

This is precisely one of the difficulties encountered in carbon markets. For example, Gabon, which preserved its forests, has struggled to access carbon finance[7], while countries that have deforested extensively, such as Côte d'Ivoire[8], can claim avoided emissions. Additionality is indispensable for offsetting claims, but not necessarily for other legitimate uses of nature credits, such as reporting, value-chain improvement or investment signalling, where the focus should be on integrity, traceability and measurable biodiversity outcomes.

4.2 Durability

The long-term sustainability of biodiversity outcomes is a fundamental requirement for credible and effective biodiversity credit markets (BCA, 2024). For a credit to retain ecological and financial value, the biodiversity gains it represents must last. This is particularly important given the mismatch between the short-term nature of many market transactions and the long-term dynamics of ecosystems (Cantillon *et al*, 2025).

The required duration of biodiversity outcomes will vary by ecosystem, conservation intervention and regulatory context. In England, biodiversity net-gain policies require credited outcomes to last for at least 30 years, while Australia's policy requires permanent protection backed by a management plan for the first decade (zu Ermgassen *et al*, 2025). In voluntary carbon markets, a benchmark of 40 years is used to ensure climate impact durability. But in the context of biodiversity, BCA (2024) recommends a minimum duration of 20 years for credit validity, along with clear evidence of the mechanisms that underpin that durability.

7 Kenza Bryan, 'If a tree doesn't fall in a forest, should Gabon get paid?' *Financial Times*, 6 March 2023, https://www.ft.com/content/010b2d2d-cdbb-4f67-86f9-149cbcc88632.

8 See Global Forest Watch, Côte d'Ivoire, 2025, https://www.globalforestwatch.org/dashboards/country/CIV/.

Securing long-term conservation often depends on land or resource use restrictions, such as easements or conservation designations. These instruments can legally bind landholders or managers to maintain ecological values over decades, as French law does with the concept of *Obligations Réelles Environnementales,* which sets environmental obligations for property owners[9].

Durability is not only about extending timeframes, but also embedding credibility, continuity and accountability into every phase of credit design. The length of engagement needs to be an attribute of the credit itself, contributing to its valuation and risk profile. Credits can have finite lifespans, at the end of which they may be renewed subject to verification. That in turn requires the establishment of registries capable of tracking issued credits over time, their associated durations and any subsequent renewal, thus ensuring robust monitoring.

4.3 Ensuring real and measurable ecological benefits

A high-integrity nature market requires institutional safeguards to ensure ecological credibility, including robust and transparent methodologies for verification, clear and enforceable standards, and the use of multiple ecological indicators to track biodiversity outcomes (WEF, 2022). A market that prioritises volume, financial turnover or ease of trade over ecological impact is unlikely to deliver environmental benefits. Many nature markets are opaque, with important data including project locations, baselines, impacts and monitoring results either hidden or fragmented. This lack of transparency impedes public oversight and weakens accountability (zu Ermgassen *et al*, 2025).

Nature markets need robust methodological and governance frameworks on the resource side to ensure the underlying assets provide real and measurable ecological benefits. At the core of high-quality crediting methodologies is the use of multiple, ecologically relevant indicators that go beyond simple measures of geographic area to include indicators of habitat structure, function and composition. Some frameworks may also include metrics that reflect specific threats to biodiversity, such as habitat fragmentation or invasive species pressures.

Verification of credits is essential to avoid double-counting, over-crediting or even outright fraud

Verification is essential to avoid double-counting, over-crediting or even outright fraud. To ensure credits correspond to biodiversity outcomes, it is also critical that the indicators used, correlate directly with the environmental goals being pursued (zu Ermgassen *et al*, 2025). While proxy metrics and fungible units (that allow one credit to be treated as equivalent to another) may reduce transaction costs and increase market efficiency, they risk obscuring ecological complexity and decoupling credits from genuine conservation value. In biodiversity markets, site-specific, ecologically grounded measurements may increase costs but are often necessary for integrity.

Market integrity also requires robust enforcement. Biodiversity outcomes are often difficult to observe directly, and buyers may lack both the capacity and the incentive to access post-purchase compliance. To prevent non-compliance, regulatory frameworks should include the release of credits only after verifiable outcomes have occurred (*ex-post* issuance), clawback provisions that allow revocation of credits if they are later found to be non-compliant, and sufficient resourcing of regulatory bodies to investigate infringements and enforce rules. In addition to regulatory oversight, accountability can be enhanced by legal innovations, such as open standing provisions, which allow third parties, including civil society organisations, to pursue legal action for breaches of credit rules. Independent third-party auditing is vital to avoid the types of conflict of interest that have undermined carbon markets, where project developers have often paid private auditors and certification bodies directly (Marion *et al*, 2024; zu Ermgassen *et al*, 2025). Detailed project-level information must be disclosed in standardised and accessible formats, and biodiversity measurement

9 Ministère de l'Aménagement du Territoire et de la Décentralisation et Ministère de la Transition Ecologique, de la Biodiversité, de la Forêt, de la Mer et de la Pêche, 'Obligation réelle environnementale', https://www.ecologie.gouv.fr/politiques-publiques/obligation-reelle-environnementale.

from remote sensing or satellite data with field work should be mandatory to ensure verification of outcomes.

4.4 Inclusion of local knowledge and co-ownership

As nature markets expand, it is essential to ensure respect for the rights and interests of local communities, as the stewards of biodiversity that are central to project design and implementation. Rights to land, water and other natural resources are often complex and contested, particularly in regions with histories of colonialism, weak tenure systems or overlapping legal frameworks.

In these contexts, communities such as smallholder farmers, pastoralists, rural producers and fishers play vital roles in biodiversity conservation through their customary practices, traditional knowledge and long-standing relationships with local ecosystems (IAPB, 2024). Yet, these same communities are frequently excluded from decision-making processes and face displacement when conservation projects are introduced without adequate safeguards. Best practice includes structuring of projects so local communities can act as equity shareholders and decision-makers, ensuring they receive fair shares of the economic benefits derived from conservation finance, and embedding local priorities into project objectives and monitoring frameworks (Antonelli *et al*, 2024; IAPB, 2024).

5 An alternative to traditional credits: nature shares

Cantillon *et al* (2025) have proposed a promising market structure in the form of an equity-based model for financing nature. Instead of commodifying discrete biodiversity gains through credits, their model enables investors to purchase shares in large-scale conservation projects issued by jurisdictions (ie government authorities). These shares entitle holders to nature dividends in the form of quantified ecological benefits, such as carbon sequestration or biodiversity improvements, which are delivered over time as projects mature.

Buyers of shares may be motivated by philanthropy or gaining a green reputation, or by a risk-reduction strategy or a regulatory requirement to hold nature-positive assets. For example, euro-area banks must make provision for biodiversity and climate risk in their portfolios, under European Central Bank rules (ECB, 2020), and nature shares are a way of aligning their portfolios with both Paris Agreement climate goals and Kunming-Montreal biodiversity goals. The nature shares would be an alternative option to balancing the portfolio with shares in green companies that are undertaking nature-positive business activities. Similarly, a long-term investor, such as a pension fund or an insurer, might buy nature shares to reduce risks related to nature loss and climate change.

The nature shares model shifts the incentive structure and lengthens the time horizon

This approach aims to mobilise large volumes of private capital by aligning investor returns with ecological outcomes. Importantly, this model shifts the incentive structure and lengthens the time horizon: investors become long-term stakeholders with a financial interest in the sustainability and permanence of the ecosystem, rather than short-term buyers of one-off credits. Moreover, there is a two-tier market system: a primary market, modelled on equity crowdfunding, through which investors fund conservation projects offered directly by jurisdictions; and a secondary market, in which investors can trade shares to ensure liquidity.

This approach can resolve the flaws of non-permanence, high intermediation costs and integrity risks in the current market for nature-based carbon removals. On the supply side, having jurisdictions as the issuers of nature shares will enable larger projects with more transparent governance. On the demand side, nature shares of this kind could attract new forms of and potentially more capital. So far, demand for biodiversity credits has largely been driven by

reputational motivations, which can lead holders to ignore problems with the integrity of the credits they have already bought. In the case of nature shares, investors would have an interest in maintaining and enhancing the value of the underlying asset so they can be traded on the secondary market. The nature dividends provide a robust form of nature and carbon credit; if there is a market for the credits, it becomes financially interesting to buy the project shares.

Under this model, the carbon and nature dividends can be used to decrease the carbon or biodiversity footprint of financial portfolios, but do not release the underlying companies from obligations to mitigate their impacts. Thus, the nature shares will not offset environmental damage, even if they offset the footprint of the financial portfolio. Responsibility for environmental damage and emissions would stay with those that cause them, but the opportunity cost of not damaging nature (eg by maintaining a standing forest rather than clearing it for agriculture) could be paid through nature shares issued by a government.

The nature shares model would broaden the range of financial instruments available for nature-related investments by aligning investor returns with ecological outcomes over longer periods. While the terminology differs, the underlying structure is similar to the two-step approach in the EU's Carbon Removal Certification Framework (Regulation (EU) 2024/3012) and is echoed in the Commission's 'Roadmap towards Nature Credits' (European Commission, 2025). In both cases, there is an initial recognition of a nature-positive intervention (through a certificate or share), followed by the issuance of units (credits or dividends) linked to verified outcomes. The nature shares would build on the existing certification logic, while introducing alternative investment formats. However, the main challenge remains the design of reliable governance frameworks that ensure transparency, traceability and credibility of the underlying ecological benefits.

6 How the EU can help to develop well-functioning nature markets

With its regulatory capacity and strategic convening power, the EU is well positioned to shape emerging nature markets. In working on the 'Roadmap towards Nature Credits' (European Commission, 2025), policymakers should focus six main priorities to establish a robust framework that works both in European countries and also elsewhere in the world. We deal with each in turn.

6.1 Consistent standards

Effective nature markets need common standards to reduce transaction costs and improve quality and integrity. The proliferation of voluntary biodiversity credit schemes has created a fragmented marketplace with a regulatory patchwork that causes uncertainty about what a biodiversity credit represents, how it is measured and whether it delivers additional ecological benefits. So far, biodiversity credit markets lack the consistent rules and methodologies needed to inspire confidence among buyers, landowners and investors.

On the demand side, investors want a high degree of certainty that a functioning market will exist for the biodiversity gains generated and for their financial instruments. Their ability to sell commodified biodiversity outcomes, and thereby generate reliable cashflows, depends heavily on stable legislation. Governments should establish environmental policies that underpin nature market demand, and should not introduce uncertainty about possible weakening or reversal of those policies.

On the supply side, regulatory uncertainty discourages landowners and land managers from enrolling in biodiversity credit schemes or making long-term investments in conservation. Without clarity on the future financial value or recognition of their efforts, conserva-

tion becomes a financially precarious proposition[10]. In addition, land managers may make land-use decisions to maximise use of the system rather than ecological improvement, so the incentives to ensure verified benefits for nature need to be especially clear and well designed.

The Commission's roadmap should promote consistent and science-based standards and reduce fragmentation. However, the Commission should thoroughly assess how much funding nature markets could realistically mobilise and over what period. It is equally crucial for the EU to develop a clear understanding of what will drive both the demand and the supply sides of these markets, to inform effective design and long-term viability. Rules such as the EU Nature Restoration Law and green risk requirements for investors could play a critical role in creating steady demand, but only if the instruments they support are grounded in widely accepted and trusted standards.

It is crucial for the EU to develop a clear understanding of what will drive both the demand and supply sides of nature markets

Recommendation: develop an EU-wide governance framework grounded in integrity and transparency. The Commission's roadmap sets out a two-step process, starting with certification and then moving to issuance of credits, which would help to develop widely accepted, science-based standards and transparent governance. For nature credits to be verifiable, additional, durable and free from double-counting, the EU should adopt harmonised certification methodologies based on science, supported by transparent registries and third-party verification. The EU should define baseline standards, permanence requirements and clear liability rules for reversal or non-compliance. Given that nature markets are likely to be even more complex than those for carbon emissions, it is vital to start now by encouraging local pilot schemes and funding technological improvements in measuring biodiversity.

6.2 Lower transaction costs

Critics of biodiversity markets argue that credit trading is fundamentally misaligned with the goal of nature conservation. High transaction resulting from complex and non-standardised financial structures, and investors' needs for profit, are usually incompatible with the transparency, local inclusion and long-term commitment need to protect ecosystems. The trade-offs between market efficiency and conservation outcomes are substantial. Effective governance, which is essential to ensure credit integrity and ecological impact, inevitably increases transaction costs. As Cantillon *et al* (2025) noted, certification, monitoring and trading often absorb up to 40 percent of a credit's sale price, leaving limited revenue for project developers and local conservation actors. To attract large-scale investors, there is ongoing pressure to reduce these costs (Kedward *et al*, 2023).

Biodiversity offset markets have long struggled with inefficiency because of the high transaction costs: for example, the UK's biodiversity offsetting pilot (2012–2014) failed to generate any trades, largely because of these challenges (zu Ermgassen *et al*, 2020). Greater flexibility in credit systems, such as using standardised biodiversity units, enabling higher trade volumes and expanding geographic and ecological boundaries, can reduce transaction costs and stimulate market activity (zu Ermgassen *et al*, 2020). However, this flexibility comes with trade-offs. Loosening 'like-for-like' offset requirements may improve market efficiency and reduce costs, but risks undermining ecological integrity by allowing less ecologically appropriate compensation for biodiversity losses.

An alternative way to reduce transaction costs is to increase the size of nature projects to the level of jurisdictions, as is the case with recent projects under the UNFCCC's forest conservation programme 'Reducing Emissions from Deforestation and Forest Degradation in Developing Countries' (REDD+)[11] and France's SNCRR (*Site Naturel de Compensation,*

10 See The Nature Conservancy, 'COP16: What happened at the 2024 UN biodiversity Conference', 5 November 2024, https://www.nature.org/en-us/what-we-do/our-priorities/protect-water-and-land/land-and-water-stories/biodiversity-global-conference/.

11 See United Nations, 'What is REDD+?' undated, https://www.un-redd.org/about/about-redd.

Restauration et Renaturation)[12]. Jurisdiction-level projects reduce transaction costs because the costs of monitoring and verification is spread over a greater surface. Costs can also be managed by improving the cost-efficiency of monitoring and verification using methods such as remote sensing, bioacoustics and eDNA (methods of detecting the presence of species), as well as verification in conjunction with other certification (eg an organic farming auditor could also check carbon and biodiversity outcomes). Common registries with other credit system, including carbon credits, could also reduce costs.

Recommendation: strategic EU coordination could help to reduce transaction costs without compromising environmental integrity by investing in market infrastructure that supports cost-effective project validation and monitoring. The Commission could consider how to reward initiatives from EU countries that are willing to be frontrunners in developing pilot schemes that strike the right balance between integrity and costs.

6.3 Clear rules for offsets

The concept behind offsets is to achieve a minimum 'no net loss' of biodiversity, by compensating losses from an economic activity (eg property development) with gains elsewhere, after having implemented previous steps of the mitigation hierarchy (IFC, 2012). The idea is that offsets may be produced either by protecting threatened biodiversity ('avoided loss' offsets) or restoring degraded biodiversity ('restoration' offsets). Biodiversity offsets, which have existed since the 1970s, often involve trading units of biodiversity in a market and can be voluntary or mandated by the government. Biodiversity offset markets are a dominant driver of private investment in conservation, generating an estimated $11.7 billion investment in 2023 (Wauchope *et al*, 2024).

If offsets are permitted in nature markets, they should adhere strictly to 'local-to-local' and 'like-for-like' principles

While biodiversity credits can, in theory, be used to offset ecological damage caused by economic activity, the challenges of doing so in practice have been so significant that some conservation organisations rule out their use as offsets[13]. Unlike greenhouse gases, which are fungible and globally distributed in the atmosphere, biodiversity is location-specific and context-dependent. Each ecosystem is composed of unique interactions, species and evolutionary histories, making it extremely difficult, if not impossible, to establish true ecological equivalence between different areas of nature (Marion *et al*, 2024). Given these complexities, any use of biodiversity credits for offsetting should be approached cautiously. If offsets are permitted in nature markets, they should adhere strictly to 'local-to-local' and 'like-for-like' principles, meaning that any biodiversity loss must be compensated for with gains of the same type and in the same geographical region (Antonelli *et al*, 2024; Wunder *et al*, 2024).

The IAPB (2024) explicitly rejects international offsetting schemes because of the risk that they enable ecological harm in one jurisdiction while funding conservation in another, thereby exacerbating global inequality and increasing land grabs. This position reflects growing concerns that offsets using biodiversity credits could replicate the failures of carbon offset markets, where credits have been used to justify the destruction of irreplaceable ecosystems in exchange for less-valuable or less-resilient alternatives. For instance, there is a danger that biodiversity credits might support low-quality restoration or monoculture planting projects in return for the destruction of ancient or primary forests. This kind of destruction of old-growth and biodiversity-rich forest has been reported under a nature credits pilot scheme on Kiiumaa island, Estonia, that is supported by the

12 Ministère de l'Aménagement du Territoire et de la Décentralisation et Ministère de la Transition Ecologique, de la Biodiversité, de la Forêt, de la Mer et de la Pêche, 'Sites naturels de compensation, de restauration et de renaturation,' https://www.ecologie.gouv.fr/politiques-publiques/sites-naturels-compensation-restauration-renaturation.

13 See for example 'WWF Position Voluntary Carbon Credits,' October 2024, https://wwfint.awsassets.panda.org/downloads/biodiversity-credits-position---october-2024---final.pdf.

Commission[14].

In addition, biodiversity loss is not reversible in the way carbon emissions might be. In carbon markets, intertemporal trades, where emissions today are offset by reductions in the future can work if emissions reductions are verifiable and sustained over time. For biodiversity, such logic is untenable. The extinction of a species, disappearance of a population or the collapse of an ecosystem represents a permanent loss. Ecological restoration can take decades, centuries or even millennia, depending on the complexity of the ecosystem in question, such as those found in Madagascar or the Galápagos Islands. To allow biodiversity destruction today in exchange for uncertain restoration tomorrow would be a huge gamble.

Because of these risks, any offsetting framework must be designed with strict temporal and geographical boundaries, long-term guarantees of protection and strict rules on ecological equivalence. Relying solely on private markets to uphold these commitments over decades, or even centuries, raises serious concerns about durability. If funding dries up or market actors exit the scheme, restoration efforts may fail and previously conserved ecosystems may again come under threat. An intergenerational governance framework would help to ensure the permanence and integrity of biodiversity conservation efforts.

Recommendation: establish clear boundaries between offsets and positive credits. To avoid undermining ecological objectives, the EU should promote nature credits that represent net-positive outcomes, independent of compensation for ecological loss. If offsetting is permitted, it must be tightly regulated, adhering to 'like-for-like' and 'local-to-local' principles, and excluding international offsets that risk shifting environmental burdens across borders.

6.4 Outcome-based metrics

Unlike carbon credits, biodiversity credits must account for complex, location-specific ecological variables

Robust, standardised and cost-effective monitoring systems are essential, especially to build the demand side of the market. Unlike carbon credits, which rely on relatively standardised metrics (eg carbon dioxide equivalents), biodiversity credits must account for complex, location-specific ecological variables. Voluntary biodiversity credit schemes are currently attempting to create units of biodiversity that are generalisable across ecosystems and regions, but this is technically and ethically difficult (Wauchope *et al*, 2024). The lack of fungibility undermines confidence in the system, especially when measurement errors or differing baselines lead to *"commodifying noise"* (Wauchope *et al*, 2024).

In response, some credit providers have chosen to reward management actions rather than measure ecological outcomes, an approach that may simplify crediting, but risks substituting effort for impact. If biodiversity credits cannot reliably demonstrate additional, permanent biodiversity gains, market manipulation could result, such as gaming the metrics or setting artificially low ecological baselines to inflate reported gains – practices already seen in both carbon and biodiversity offset markets (Wunder *et al*, 2024). That is why a vital distinction must be made between certificates (valuing practices) and credits/shares (valuing outcomes).

Recommendation: invest in developing better monitoring and metrics to build trust. The EU should support innovation in biodiversity accounting and ensure that credit methodologies reflect site-specific ecological complexity and avoid oversimplifying outcomes.

6.5 New sources of demand from sustainable finance

Institutional investors with longer-term horizons could serve as a new source of demand for nature shares, if regulatory structures provide the right mix of requirements and incentives. Cantillon *et al* (2025) pointed to the potential for nature projects to become another class of carbon-negative and nature-positive assets that portfolio managers could use to reduce the carbon and biodiversity footprints of their financial portfolios. In addition to shuffling their assets from brown to green firms (firms that are decarbonising or have lower environmental

14 *Canopée*, 'En Estonie, la MAIF impliquée dans un projet forestier controversé', 17 June 2025, https://www.canopee.ong/le-media/enquetes/estonia-nature-credits/.

footprints), they could also invest in nature shares to rebalance their whole portfolio towards green investments. However, as discussed above, this does not mean that companies or others that cause environmental damage should be allowed to offset that damage by buying nature shares. Mandates for pension funds – which are already leaders in sustainable investment – to invest in nature shares would also boost demand (Cantillon *et al*, 2025).

Recommendation: mobilise demand through regulatory and financial incentives. Policy levers such as tax benefits, green public procurement, sustainability disclosure requirements and integration into the EU sustainable finance frameworks can act as strong drivers for demand for high-quality nature credits.

6.6 No withdrawal of public funding

A particular additionality challenge arises when the introduction of nature markets causes public funds to be cut, undermining efforts to maintain robust long-term investment in conservation. In many cases, private finance going into nature credit schemes has displaced rather than complemented public investment and has failed to deliver meaningful progress in achieving biodiversity outcomes (Kedward *et al*, 2022; Marion *et al*, 2024).

One response to this is blended finance, which combines public and private resources to involve more stakeholders. Public funds are used to reduce risks associated with nature-based projects, which can attract larger-scale private investment. The public sector may provide upfront returns to private investors or guarantee future losses, thus improving the risk-return profile of nature-related investments.

The EU could ensure dedicated public seed funding to encourage blended finance, including upfront investments to reward and scale up early-stage certification and nature credit initiatives. However, the International Monetary Fund and other financial experts have cautioned that such de-risking strategies may ultimately be more costly for governments, as they shift immediate costs off public balance sheets but incur higher future liabilities (Kedward *et al*, 2023).

Public investment is necessary not only to counteract free riding – private actors benefitting from ecosystem services without contributing to their conservation – but also to ensure the provision of bundled ecosystem services that nature markets struggle to address. The logistical challenges of disaggregating ecosystem services into separate markets have hindered the effectiveness of nature credit systems in delivering additional benefits (Kedward *et al*, 2023).

The EU must ensure that market-based instruments are not used as a justification for reducing long-term public funding

Recommendation: ensure nature credits complement, not replace, public spending. The EU must ensure that market-based instruments are not used as a justification for reducing long-term public funding, either in the EU budget or in national, regional and local budgets. Blended finance instruments and targeted public support, such as de-risking mechanisms and seed funding for early-stage projects, should be well designed to crowd in private capital while generating verified ecological benefits.

7 Conclusion

The case for urgent action to confront a deepening nature crisis is no longer solely environmental: restoring nature and maintaining ecosystem services are strategic imperatives for the EU's long-term economic security and competitiveness. Public funding must remain the foundation of this effort. However, both within the EU and globally, the scale of need far exceeds the resources that governments alone can provide.

Well-designed nature markets could help mobilise private capital to support projects that deliver verifiable, durable improvements in ecosystem health. Yet success is far from guaranteed. Experience from voluntary carbon markets highlights the dangers of poorly governed

systems: inflated claims, low-quality outcomes and loss of public trust.

Nature markets can only avoid these pitfalls if they are built on rigorous scientific standards, transparent methodologies and robust enforcement. Particularly important will be standardised measurement and mechanisms to ensure that credits represent real, additional and enduring gains for nature.

The EU should take clear positions on the types of instruments it intends to support, how to ensure sufficient demand and how to measure environmental outcomes with meaningful metrics, especially for biodiversity. Technical standards are needed, but so is shaping of the broader market architecture, helping to define credible conditions for both supply and demand. New market designs, such as a nature shares scheme, need to be piloted in order to expand trade in novel instruments in Europe on the best footing. For nature projects in developing countries, respect for the rights and interests of local communities is essential because they are the stewards of biodiversity who need to be central to project design and implementation.

Realistic expectations about nature markets will be vital to ensure that they reinforce, rather than distract from, core EU environmental strategies

Strategic direction from the Commission to set realistic expectations about market scope, drivers and funding potential will be vital to avoid a bubble and ensure that nature markets reinforce, rather than distract from, core EU environmental strategies and existing funding. Nature markets need to align with the EU Biodiversity Strategy, the Nature Restoration Law and broader climate goals. Policymakers should treat new financial instruments as tools for greater ecological ambition, not as substitutes for regulatory measures or justifications for harmful practices elsewhere.

Avoidance of the withdrawal of public funding for nature as a result of a small amount of private finance becoming available will be crucial. Even on the most optimistic forecasts, the market for nature credits will not reach anything like the size needed to close the financing gap. In the case of nature shares, the projects underlying the financial instruments offer returns that pay nature dividends over long periods, not significant financial returns. Equity-like instruments may improve market efficiency and accountability, but public funds will remain essential, especially to support ecosystems that are not immediately investable or cannot generate a financial return on investment or monetisable benefits.

Additional sources of finance are also not a substitute for policy reform. Most importantly, nature-harming subsidies must be eliminated, particularly those under the EU's Common Agricultural Policy. The EU needs to align its 2028-2034 budget cycle with environmental objectives, while national governments should fully implement the EU Nature Restoration Law, regardless of whether nature markets bring in private capital.

Private finance instruments can enhance and accelerate public action, but cannot replace it. If badly designed, nature markets could create the illusion of progress while deferring critical decisions, or even cause a net loss of public funding for nature conservation and restoration. The EU should not simply foster the trading of nature credits. It should ensure that nature-positive financing, both public and private, is scaled up, better tracked and more effectively targeted, to meet the targets of the 2030 Biodiversity Strategy and to ensure long-term ecological and economic resilience.

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