

Biodiversity Credits: High Integrity or No Integrity?

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List of Abbreviations

BCA Biodiversity Credit Alliance

BioFin Biodiversity Finance Initiative

CBD Convention on Biological Diversity

COP Conference of the Parties

CPIC Coalition for Private Investment in Conservation

GBF Global Biodiversity Framework

HLP high-level principle

IAPB International Advisory Panel on Biodiversity Credits

IPBES Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

IPLCs Indigenous peoples and local communities

IUCN International Union for Conservation of Nature

NGO non-governmental organisations

SIDA Swedish International Development Cooperation Agency

TEEB The Economics of Ecosystems and Biodiversity

TNC The Nature Conservancy

UK United Kingdom

UN United Nations

UNDP United Nations Development Programme

UNEP United Nations Environment Programme

UNEP FI United Nations Environment Programme Finance Initiative

WEF World Economic Forum

WWF World Wide Fund for Nature

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Clive L. Spash^{*†} and Frédéric Hache^{*‡}

Abstract

In the build-up to the 17th Conference of the Parties to the Convention on Biological Diversity a big push has been made to claim the finance sector has the answers to stopping the ongoing mass extinction of species and destruction of ecosystems. Their solution is nothing new but rather the redesign and expansion of biodiversity offsets. Recognising the wide range of social and ecological failings of the past, and lessons from carbon markets, the claim is being made that redesign can address all the concerns from specific features, such as additionality, durability, metrics, incommensurability, to governance and the exploitation of IPLCs. The combined efforts of IAPB, BCA and WEF have come together to create a High Integrity Coalition which has advanced a new *Framework* published across several reports. The central claim is that a finance gap is the main cause of biodiversity loss and only private sector business interests can address this by buying and selling a variety of credits at scale and combining biodiversity and carbon markets. In this critical review of the *Framework* we question these claims and identify who is behind the advocacy of high integrity biodiversity credit markets, which brings into question their claims to scientific objectivity. Their narrow framing is exposed as excluding policy alternatives and failing to address the scientifically established root causes of biodiversity loss. The specific design proposals for credit markets are critically reviewed showing serious flaws in the *Framework* including contradictory claims and superficial coverage of substantive issues. The review covers the (high integrity) principles proposed to allow market trading and those meant to improve governance and prevent exploitation of IPLCs. We conclude that this reformist agenda using the rhetoric of environmental concern merely attempts to maintain business as usual when systemic transformation is necessary to address the actual causes of biodiversity loss and ecosystem destruction and prevent ongoing land grabbing and coercion of IPLCs.

Keywords: biodiversity, credits, offsets, financialisation, finance gap, global biodiversity framework, COP, market-based solutions, nature positive.

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Introduction

Several major initiatives are underway to launch fully fledged, 'at scale', international markets for biodiversity credits. The idea of such financial instruments has been heavily promoted in recent years with the rise of high level lobby groups combining backing by financiers, banking and business sectors, national governments and non-governmental organisations (NGOs). Amongst the conservation NGOs prominent backers have been The Nature Conservancy (TNC), World Wide Fund for Nature (WWF) and International Union for Conservation of Nature (IUCN). The United Nations (UN) has also played a key role via the UN Environment Programme (UNEP), and its Finance Initiative (FI), which supported and promoted *The Economics of Ecosystems and Biodiversity* (TEEB 2010) as the first major international push in this direction. Since then, various lobbying networks have appeared connecting many of the same players. For example, the Coalition for Private Investment in Conservation (CPIC) was established in 2015 by TNC, IUCN, Credit Suisse, Nature Vest and a think tank at Cornell University, attracting financial speculators to develop biodiversity credits markets for private gain and advancing business interests. It quickly expanded to over 120 members, produced a flurry of reports and then faded as new networks appeared supported by neoliberal governments and subject to even greater influence from financiers and corporate interests.

Most recently, a major international initiative was launched in June 2023 by the national governments of France and the United Kingdom (UK) entitled the International Advisory Panel on Biodiversity Credits (IABP). This is headed by co-chairs Sylvie Goulard (France) and Amelia Fawcett (UK), and supported by a twenty-six person panel representing key organisations and an additional loose collective of report writers. IABP's stated aim is to facilitate “the creation and growth of high-integrity biodiversity credit markets”.¹ Together with the World Economic Forum (WEF), and the Biodiversity Credit Alliance (BCA) they

¹ <https://www.iapbiocredits.org/home> Accessed 26/08/2026

have published the *Framework for High Integrity Biodiversity Credit Markets* (IAPB 2024) and *High-level Principles to Guide the Biodiversity Credit Market*. (WEF 2025). The latter explains that high standards of environmental and socioeconomic integrity in biodiversity credit projects are essential for markets to allocate funding to vital ecosystems, reduce nature-related risks for businesses, and provide benefits to Indigenous peoples and local communities (IPLCs). Quality assurance aims to build widespread confidence in the financial product allowing international market expansion. We will refer to this biodiversity credit triumvirate—IAPB, WEF, BCA—as the High Integrity Coalition and their joint proposal in the two reports, and other documents, as the *Framework*.

The three organisations are not actually independent of each other. For example, the IAPB includes Simon Morgan, affiliated with the nature-market consultancy CreditNature, who is attributed with being key to conceptualising the BCA. The BCA is an international group launched at the 15th meeting of the Conference of the Parties (COP) to the UN Convention on Biological Diversity (CBD), December 2022, with support from the UN Development Programme (UNDP), the UNEP FI and the Swedish International Development Cooperation Agency (SIDA). Their website states they are “powered by UNDP” in partnership with UNEP FI, Federal Ministry of Economic Development and Cooperation (Germany), European Union, SIDA, Biodiversity Finance Initiative (BioFin), and Development Bank of Latin America and the Caribbean. The BCA and BioFin are stated to be flagship initiatives of the UNDP. As hundreds of newly established nature finance consultants have appeared so the BCA has grown to over 600 members, as well as involving a range of conservation NGOs (e.g. TNC, IUCN, WWF), academics and business interests. The WEF was established to promote business interest and is an international high profile lobby group funded by large corporate member companies and famous for its annual meeting in Davos, which attracts corporate leaders and high level politicians alike.

There then appears to be a conflict of values and interests between the expectations of the business and financial sectors for investment returns and action necessary to address the real, scientifically identified, causes of biodiversity loss and mass species extinction. The divergence of interests impacts the effectiveness of policy. Indeed, a major problem for such initiatives is the poor performance of environmental credit and offset markets, and their bad reputation due to accumulated experience of social, ecological and economic failures. Such problems have been evident since the first initiatives to create 'carbon markets' to control greenhouse gas emissions (Böhm and Dabhi 2009; Lohmann 2006), with scandals plaguing carbon offsets (Brinded 2012; Seager 2009). IPLCs have been targeted to implement offset schemes because their financial poverty and lack of power makes their buy-in cheap and exploitation easy (Bachram 2004). There is then clearly a desire of the High Integrity Coalition to distance biodiversity credits from these associations. However, there are also moves to create linked biodiversity and climate credit schemes (BCA 2026; IAPB 2024), which would strengthen the association and likely exacerbate the problems. The *Framework* promises to prevent this and address all past failures.

The prevalent idea has long been that redesign can avoid all the problems facing environmental credit markets, but this ignores inherent characteristics of market institutions that cannot be simply designed away (Spash, 2010). Most fundamentally, the implicit ethics of a market is to incentivise gains from trade and profiteering. Environmental markets involve trading and offsetting inherently harmful activities, deliberately undertaken, which are legitimised by claiming separate activities can compensate and counter the damage and harm done to others. Both government regulated and voluntary schemes are subject to such market structure (Rizzi and Krause 2026; Spash and Theine 2018).

By introducing the concept of integrity, the High Integrity Coalition recognises that projects initiated to address biodiversity loss will have social, ecological and economic impacts that need to be taken into account and subject to ethical scrutiny. Such projects are

embedded in the wider moral context of species extinction and the ethical treatment of non-humans. The moral context also includes the consequences for IPLCs who live in close direct connection to such projects. A central question that arises is whether market structures and the objectives of finance are compatible with meeting such moral concerns.

The business and political backing for the *Framework* initiative place it in a powerful position to have a significant influence on the design of several future national biodiversity credit markets as well as the European Union's forthcoming nature credits scheme². IAPB already advises the government of Indonesia on creating a credit market. Critical analysis of the proposed *Framework* is therefore required to assess whether its high integrity claims are credible and consistent with its design. We start by investigating who is behind the advocacy of high integrity biodiversity credit markets, which brings into question their claims to scientific objectivity. In particular, the narrow framing of policy is exposed as excluding alternatives and failing to address the causes of biodiversity loss. We then turn to the specific proposals of the *Framework* and its design features. This is shown to have identified a range of issues, many of which have been exposed by the failings of carbon offset markets, and set out a range of high integrity principles. We critically review these proposals and expose a variety of problems with the *Framework* including contradictory claims and superficial coverage of substantive issues. This review is divided into two sections covering those high integrity principles addressing market trading and those relating to governance and IPLCs.

The Financial and Market Framing of Biodiversity

The IAPB (2024: 30) states that, “Investment in Nature is investment in people and their work to protect, conserve and restore the environment around them”. There are inadequate economic incentives for businesses to change their behaviour from environmentally destructive activities, financial markets are doing too little and a fundamental rethink of

² European Commission, Nature Credits, https://green-forum.ec.europa.eu/green-business/nature-credits_en
 Accessed 14th September 2026.

financial systems is required (IAPB 2024: 12, 20). Their proposed credit markets solution concerns framing the issue as one of returns on investment, including financial incentives described as fair rewards for Nature's stewards. The framing of biodiversity loss as an issue of finance goes back to the UN funded TEEB project run by Pavan Sukdev, formerly at Deutsche Bank's Global Emerging Markets Division. The final report claimed that "Companies do not clear-cut forests out of wanton destructiveness or stupidity. On the whole they do so because **market signals** — [...] — make it a logical and profitable thing to do" (TEEB 2010: 9 emphasis original). Such a perspective caricatures what constitutes business motivation and human behaviour as solely determined by market prices while ignoring what actually causes biodiversity loss (Spash 2008; 2011).

However, it is a perspective found within orthodox mainstream economic theory as exemplified by the internationally acclaimed *Dasgupta Review* (Dasgupta 2021). In that report, Nature is converted into capital and biodiversity becomes an enabling asset, so that all ecological and biological reality is removed. The only concern is to somehow create shadow prices, reflecting 'true costs' to internalise externalities, so that the optimal portfolio of investments can be planned on the basis of corrected market prices. There are numerous problems with the *Dasgupta Review* from its inability to address the value of even man-made, let alone natural, capital to the impossibility of calculating shadow prices to reflect plural incommensurable values (Spash and Hache 2022). The approach is also misaligned with reality. Preventing biodiversity loss has nothing to do with a profitability requirement based on cost and return on private investment. Most obviously, when the return on biodiversity investment declines or is low compared to alternatives then profit seekers divest. Put simply, species that give poor financial returns will go extinct. Neither do actual markets operate as in the orthodox mainstream economic theory that the likes of Dasgupta and Sukdev employ.

As Bouleau (2018) has explained, financial markets are inefficient resource allocators contra economists' textbooks. Their propensity to generate volatility obscures price signals

and makes them useless for making meaningful public or private resource allocation decisions. As Kapp (1950) long ago recognised, prices fail to reflect resource costs because they are subject to power relations and the ability to shift costs on to others. Standard appeals to internalising externalities are a misleading blind to reality (Spash 2021; Spash and Fuselier 2023). An interesting question is then, who is promoting these flawed and misleading economic ideas and how are they being introduced into biodiversity policy.

Vested Interests and Financial Bias

The IAPB's (2024: 12) recognition that “Nature provides the basis for all living things on Earth”, and its unsustainable depletion and loss of biodiversity must be reversed, is set within the context of delivering on the goals of the Global Biodiversity Framework (GBF), produced at the Kunming-Montreal 15th COP, and more specifically its reference to (global) financial flows. Similarly, the BCA states that their mission is the realisation of the Kunming–Montreal GBF, and “in particular Targets 19(c) and (d), which ‘encourage the private sector to invest in biodiversity’ utilising, amongst others ‘biodiversity credits ... with social safeguards’.” (BCA 2023a: 2). However, the quotation is highly selective and as a result misleading. Target 19 concerns increasing finance “from all sources, in an effective, timely and easily accessible manner, including domestic, international, public and private resources” in order to implement national biodiversity strategies and action plans. The full sub-clauses 19(c) and (d) aim to do this by:

“(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; ” (UNEP 2022)

Target 19 is one out of twenty three Targets, it has seven subclauses, and offsetting is one of five mechanisms mentioned in this Subclause (d). This is a minimal mention and subject to

the qualification “with environmental and social safeguards”. However, such a simple mention enables a foothold from which the financially well backed biodiversity offsets and credit lobbyists have tried to build. That their approach faced opposition in the COP negotiations is evident from deletion of the clause on 'no net loss' from the final agreement (UNEP 2022), which appeared in the draft GBF (UNEP 2020). Despite this, some still claim GBF endorses an offsetting-associated net outcomes framework (e.g., Bull 2026). This fallaciously equates the general call of the GBF for reducing biodiversity loss and restoring degraded areas with requiring biodiversity offsetting (Spash and Hache 2026).

Another private finance foothold in the GBF was inclusions in Goal D of progressively closing a supposed biodiversity finance gap of \$700 billion per year. This opened the door for financial lobbyist to debate the topic at COP 16 in Colombia 2024. The High Integrity Coalition (IAPB 2024: 22; WEF 2025: 3, 5, 19) have adopted the idea of a funding gap as the primary reason why there is a lack of action to stop biodiversity loss. The biodiversity crisis is then caricatured as a funding issue. Promoting a lack of government funding, while avoiding questioning government biodiversity policy inaction, appears purely strategic in terms of empowering the role of private finance.

The existence of a \$700 billion per year finance gap has itself been seriously contested (see Standing 2024). It first appeared in a report from the Paulson Institute, TNC and the Cornell Atkinson Center for Sustainability (Deutz, et al. 2020). The Paulson Institute’s founder is multi-millionaire financier Henry Paulson, net worth over \$750 million, former CEO of Goldman Sachs and 74th US Secretary of the Treasury. TNC’s former CEO Mark Tercek (2008-2019), was a partner and manager at Goldman Sachs for 24 years, who controversially entwined the organisation in their ongoing sale of environmental offsets to major corporations (Spash 2022). TNC were founding partners of CPIC in 2015 and are heavily engaged in the IAPB. The Cornell Atkinson Center is a think tank created by another

financier, David Atkinson, former vice president of JP Morgan. The finance gap has clear origins within an elite of financiers and the figure itself appears *ad hoc* (Standing 2024).

The strategy characterises nation States as being too poor to address biodiversity loss and claims that only private investors can supply the necessary money. That nation States are unable to publicly finance biodiversity protection is easily contested. For example, environmentally harmful subsidies were calculated in 2024 as between US\$1,700bn (UNEP 2024) and US\$2,600bn (Bromley 2024), and more recently at \$2,400bn (UNEP 2026). If such calculations are correct then shifting a fraction of harmful subsidies would close the entire, supposed, finance gap without any need for private capital, raising taxes or increasing budget deficits. Governments might, for example, rearrange public finance to address agricultural impacts on biodiversity by incentivising different agricultural and land-use practices without even reducing subsidies or changing the beneficiaries.

Excluding Alternative Policies

Why are biodiversity credit markets deemed to be the most preferable policy when alternative policy tools exist, such as tighter environmental regulations curbing destruction at source, and shifting existing harmful subsidies? The *Framework* recognises that biodiversity credits are not a silver bullet or substitute for more consistent public policies which, besides changing price incentives and subsidies, include ecosystem protection and sanctions against harmful behaviour and pollution. However, the High Integrity Coalition fail to conduct comparative analysis of these alternatives. There is then no explanation as to how public regulation and market-based mechanisms are meant to operate together. The argument is put forward that “all possible tools need to be utilized” due to the scale and urgency of the combined climate change and biodiversity crises (WEF 2025: 3). This ignores the documented conflicts between different mechanisms that produce counter productive results (Ling, et al. 2024). More specifically no account is taken of how economic incentives crowd-out moral behaviour and can be self-defeating as a result (Frey and OberholzerGee 1997).

The WEF (2025) states that the GBF identified biodiversity credits as a tool that could help close the biodiversity finance gap. As noted above, this mention falls under GBF Target 19 which requires financial resources be “effective, timely and easily accessible” while the relevant subclause additionally requires “environmental and social safeguards”. However, no evaluation on any such criteria is undertaken. The IAPB (2024: 12) merely states that:

“We require a range of public and market-based mechanisms, and we must encourage businesses to value and invest in biodiversity. Biodiversity credits (and credit markets) are one mechanism for market actors to channel financial flows to support the transition to a Nature-positive future”.

This raises more concerns than it addresses. Who is being represented when using the term “we”? The claim that financial markets can and should do more appears self-critical but actually promotes private finance over government action and direct regulation. The interests of business and market actors appear taken as given, along with their values. The problems inherent in reducing the plural values of biological diversity to monetary returns on investment are simply ignored. The IAPB's (2024: 20) call to “fundamentally rethink our relationship with Nature and transform our economic models and financial systems” appears purely rhetorical and the substance more like business-as-usual.

An implicit reformist agenda is being disguised as transformative sustainability. Here the High Integrity Coalition is following a broader trend. Brand (2022: 40-41) has referred to a “new critical orthodoxy” which adopts the language of more radical environmentalists and much of the same critical perspective on the ecological crisis, but rather than seeking systems change the objective is to work within current institutions and accept existing political power relations, including corporate colonialism and neo-extractivism. Reformist approaches encourage economic growth ignoring social-ecological limits.

This is something that has been identified as common across offset promoters (Damiens, et al. 2021). Offsetting is marketed as an instrument for the transition to sustainable

economies operating within planetary boundaries, while it actually avoids the necessary major structural changes that would require, because they would undermine the power of dominant reformist coalitions themselves. Transformative change requires renouncing non-essential projects, preventing deliberate harm, and designing transparent policy tools that make clear who gains and how. Biodiversity offsets hide the enrolment of conservation in the service of status quo development and non-transformative practices (Damien, et al. 2021).

In fact, they replace other policy options and especially planning and regulatory approaches that have been core successes of conservation. The IAPB (2024: 15) claim that “Credits should also not replace or crowd-out action and investment to avoid or minimise impacts directly”, and “Private financial flows unlocked by biodiversity credits should also not supplant public or philanthropic funding”. However, they then state that: “During these initial development phases, biodiversity credit projects will mainly be financed by public funding or philanthropy [...]” (IAPB 2024: 15). This clearly contradicts the claim that only private investment can help or fill a funding gap. At the same time, specification of measures to ensure enforcement or penalties in case of non-compliance are lacking from the *Framework*. The costs of establishing, regulating and policing such markets are liable to place considerable demands on public authorities and so their budgets for biodiversity protection, which means crowding-out other policies.

Dempsey (2026) argues that biodiversity credits derive their political appeal precisely from their instrumental use as mechanisms to crowd-out more effective alternative policy tools that directly prevent biodiversity destruction. Industries that carry out extensive and regular activities that are harmful to Nature have much to lose from tighter environmental regulations that curb destruction at source. Contra orthodox economists claims, regulations include a market incentive because they impact future expected profits in different sectors and private capital flows adjust accordingly. Paying a small fee to buy biodiversity credits prevents having to stop business activities. Proponents of these markets only want to address

the biodiversity crisis insofar as it supports short-term profits, competitiveness and existing unsustainable production and consumption patterns. Dempsey (2026) argues that the true beneficiaries of such “Wall Street Conservation” are companies with harmful activities which get a social licence to continue operating and in so doing prevent tighter environmental regulations. In addition, she notes that neoliberal governments can counter criticism over their inaction by deflecting attention towards the need for private capital to do more.

At the international level offsets have already provided political leverage to prevent tighter environmental regulations (Spash and Hache 2026). For example, the aviation industry adopted a voluntary carbon offset policy—Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)—to help prevent or delay regulation capping aviation emissions (O’Leary, et al. 2025), while negotiations for a Global Plastic Treaty saw promotion of plastic offsets to prevent a cap on production (Staufenberg 2025). The BCA (2023b: 22) explicitly discusses credits as “[a] way to forestall regulation” and describes demand for credits being undertaken to “demonstrate leadership and proactive approaches, avoiding, or delaying regulation [...]”.

Whether biodiversity credit markets have high integrity or not, and actually function or not, is irrelevant, as long as the illusion is maintained that work is progressing to that end, and that public opinion is distracted from calling for the root causes of biodiversity loss to be addressed. Debating secondary issues concerning nature credit markets within the *Framework* leaves existing unsustainable paradigms unquestioned. It removes calls for laws incentivising more sustainable diets, transports and housing or banning unsustainable and unethical practices.

Failing to Address the Causes of Biodiversity Loss

The IAPB’s overall aim is framed as requiring that: “Economics and finance must consider biodiversity and its values as part of the transition to sustainable growth” (IAPB 2024: 12). So, their aim is to maintain and reproduce growth economies in the belief that such systems

can and should be sustained. Credit/offset schemes, via such mechanisms as habitat banking, aim to justify activities such as mining, fossil fuel exploitation, power sector and infrastructure development (IAPB 2024: 43). Ecological economists have long held that sustained economic growth on a finite planet results in hitting social and ecological limits. That is, “sustainable growth” is an oxymoron. Put more simply, sustained economic growth is the cause of, not the solution to, biodiversity destruction.

However, the Hight Integrity Coalition leave the causes of current environmental crises unaddressed and as a result there is no explanation of why new financial markets would prevent social ecological crises. The financial perspective contrasts with scientifically informed reports that identify human exploitation of and domination over Nature as causal mechanism of environmental crises. For example, The Lancet Commission project EAT (Rockström, et al. 2025), found that the root causes of biodiversity loss are changes in land and sea-use, overexploitation of natural resources (e.g. overfishing), climate change, invasive alien species and pollution. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) lists the same five factors as the direct causes of negative impacts for Nature, and list the indirect underlying causes as societal values and behaviours that include: production and consumption patterns, human population dynamics and trends, trade, technological innovations and governance (IPBES 2019: 12).

Rockström et al.(2025) regard the global food system as driving biodiversity loss, with deforestation due to agricultural expansion as the main cause. While 77% of all agricultural land is used to raise livestock for meat and dairy, the food produced on that land only contributes 38% of the world’s proteins and 17% of the world’s calories. Their main recommendation is to cut food waste and change diets to reduce meat overconsumption, leading to dramatic reduction of biodiversity loss, Greenhouse Gas emissions and water pollution. They suggest that this could be incentivised by taxing and regulating advertising of unhealthy food, making healthy food cheaper, and rearranging agricultural subsidies from the

unhealthy to the healthy foods. This is a mixture of market price incentives, regulating market activities and redirecting public investment, all of which rely upon national governments taking direct action.

The High Integrity Coalition's focus on private finance fails to specify what action is actually necessary to address the root causes of biodiversity loss, or how biodiversity credit schemes will do so. For example, agricultural driven deforestation due to meat production is not reduced by incentivising forest conservation offsetting. The approach appears end-of pipe rather than targeting the source of the problem. Indeed, creating an entirely new complex financial market infrastructure for a pseudo-commodity appears the least desirable option.

Designing High Integrity Biodiversity Credit Markets

Markets are socially constructed institutions and as such there is much variety, but they all depend upon a level of trust between buyer and seller. Functioning markets operate within a certain code without which trading collapses. Where trust breaks down conflicts arise and attempts to maintain trading increase transaction costs. Even black markets and illegal trading require some 'honour amongst thieves' and involve (often violent) enforcement against rule breaking. Legal markets typically resort to government regulation and contract law employing specialist language, expert lawyers and complex clauses summarised by the colloquial warning to 'read the small print'. Issues of transparency and various forms of coercion come to the fore when considering how markets should be designed.

In the context of a biodiversity credit market, a claim of integrity has been added to imply high moral standards can be designed into the institutional framework that allows and legitimises trading and exchange. The meaning of high integrity markets needs some clarification. The dictionary definition of integrity is the quality of being honest and having strong moral principles (OUP 1998). Such principles are concerned with doing what is right based on an understanding of what constitute good versus bad behaviour. For example, lying and

cheating, or wilfully deceiving and misleading other people are broadly accepted as wrongful acts. A person of strong moral principles would avoid being a liar or cheat. In order to establish good moral conduct, human societies establish institutions directing behaviour, where institutions are understood as constituted of conventions, norms and socially sanctioned rules and regulations (Vatn 2005).

What constitutes a market is similarly institutionalised. This includes designating what can be traded under which conditions. Markets are established based on societal judgement intertwined with ethics. For example, labour markets include trading slaves, prostitution, unpaid care work, waged labour, and varying conditions of exploitation. What constitutes a legitimate item of exchange and how this takes the form of a commodity are matters subject to value conflict and open to contestation.

In order to promote a market there must be a shared basic idea of the 'commodity form' for trading, that is what could constitute a valid item for exchange. For biodiversity, the BCA produced the following definition, which they regard as simple and inclusive:

“A biodiversity credit is a certificate that represents a measured and evidence-based unit of positive biodiversity outcome that is durable and additional to what would have otherwise occurred” (BCA 2024a: 7)

The *Framework* of the broader High Integrity Coalition is constituted of three additional foundational requirements: (i) verified positive outcomes for Nature including additionality, baselines and durability; (ii) social equity and fairness for people especially IPLCs, and (iii) good governance of the markets (IAPB 2024: 13, 30; WEF 2025: 8). There are twenty one more specific high-level principles (HLPs) listed (IAPB 2024: 52) and detailed further (WEF 2025). Verified outcomes require robust evidence of claimed consequences for biodiversity, and that they be additional to business-as-usual in order to add real benefits for Nature which should be long lasting. The social goals of equity and fairness are framed in terms of the inclusion, participation and leadership of stewards of Nature, meaning that projects must be

co-designed, co-implemented and co-governed with IPLCs (IAPB 2024: 30). IAPB's understanding of market structure recognises the central role of institutions for establishing relationships of trust and confidence with biodiversity market actors, and the wider community (IAPB 2024: 30). A full range of issues is recognised in the outlining of problems facing the *Framework*, but the following critical analysis of the approaches adopted reveals contradictions and extensive problems. In this section we concentrate on the elements of design relating to market structure and in section 4 address governance and IPLCs.

Defining Objectives, Activity Types and Demand

The crisis of mass species extinction and loss of biological diversity is framed as an issue of commodity (credit/offset/certificate) supply and demand within a market economy (see BCA 2023b; BCA 2024b). Central to such market institutions is the creation of private property rights over an identifiable commodity that can be exchanged for money. As noted, markets are founded on the basis of enforcement of regulations and contract law which aim to create trust in transactions and prevent fraud, exploitation and coercion. Markets and related financial contracts are neither inherently efficient nor singular in form, but complex and susceptible to numerous problems, even when dealing with every day commodities.

The *Framework* develops different roles for credits as supplying either means of offsetting damages, termed compensation projects, or as claims to be undertaking a positive environmental action. The latter might be incentivised by businesses seeking to avoid or anticipate government regulation, promote their Green credentials, or speculatively invest in anticipation of future demand and price increases (BCA 2023b). Attempts are then made to distinguish a range of biodiversity credit demand from offsetting (HLP2).

The BCA (2023b: 8) claim that: “[b]iodiversity credits offer a non-offset opportunity for companies to demonstrate nature-positive strategies [...] opening new business opportunities” and aiding their long-term viability. The demand here is expected from businesses with environmentally damaging practices, termed their “biodiversity footprint” (BCA 2023b: 9).

So, they are actually paying to indirectly offset their biodiversity footprint. Similarly, demand that expects to pre-empt regulation is actually indirectly offsetting an expected liability for harm. Credits of different sorts described by the High Integrity Coalition then appear to stretch rather than avoid offsetting, and expand it from direct to indirect forms of compensation (i.e. footprint, speculative investment or similar). All credits share the central strategic aim of allowing business-as-usual and making allowance for on-going biodiversity destruction across a range of sensitive habitats and ecosystems. That is they concern gain and loss.

There are nuances between the roles of credits being demanded because genuine direct offsetting has stricter requirements of equivalence. Such biodiversity credits are premised on the need to compensate for destroying habitat, species and related ecosystems structure and functioning in one place (demand side) and offsetting this with man-made and managed sites expected to compensate for what is lost (supply side).

Compensation Projects and Offsetting Harm

The *Framework* allows biodiversity credits to be used for offsetting which is justified as supporting a variety of approaches, projects and objectives. The IAPB (2024: 40) discusses the use of biodiversity credits to “compensate for significant unavoidable residual negative impacts on biodiversity from development”. An “unavoidable impact” is left undefined, as is how and by whom it would be determined, but is subject to the mitigation hierarchy (HLP2). The mitigation hierarchy for site specific biodiversity impacts due to development and resource extraction requires that action be taken in the following order: avoid, minimise, restore, offset. While offsetting is meant to be a last resort in practice it may be planned at the outset. Indeed, the Smithsonian's National Zoo & Conservation Biology Institute recommends that offsets “should be prepared at the start of the project to maximize their efficacy”.³ The offset stage is associated with a 'no net loss' goal; noted earlier to have been excluded from

³ <https://nationalzoo.si.edu/ccs/mitigation-hierarchy> Accessed 16/09/2026

the GBF. In an empirical study, Cares et al. (2023) found misclassification of the measures and that the use of compensation measures exceeded expectations compared with the correct implementation of the mitigation hierarchy. They also found environmental impact assessment was unable to confirm whether no net loss was achieved.

Such offsetting is meant to be based on equivalence aided by restriction to the location of damages and replacement by something similar.

“Local-to-local and like-for-like compensation biodiversity credits could make use of international financial flows, for example finance from an international company to carry out projects locally to where the organisation has had a direct impact on Nature.”

(IAPB 2024: 42)

This still allows multinational corporations to operate business-as-usual across countries by offsetting within an undefined “local” area, or even across borders if there is a transboundary ecosystem or ecoregion (IAPB 2024: 42). What is meant by local is left unclear.

In presenting these ideas, the term offsetting is largely avoided and explicitly substituted by the term “local compensation”, on the grounds that this somehow allows stricter conditions (IAPB 2024:42). The substance remains the use of biodiversity credits to provide commensuration between actions claiming to maintain or restore biodiversity and “negative impacts on biodiversity from development activities” (IAPB 2024:42). Even local credits still require oversimplifying millions of species into only a few types for market liquidity purposes, which is incompatible with environmental integrity. While IAPB (2024: 40) note the possibility that “scientific limitations” could prevent local compensation for direct biodiversity impacts from being fully effective, even within a nation state, the implications go unaddressed.

Unknown Consequences and the Evidence-Base

The *Framework* allows for the issuance and sale of biodiversity credits before a positive environmental outcome has been measured, i.e. ex ante credits (HLP4). This clearly

contradicts the high integrity requirement of verified positive outcomes for nature. The justification provided is extremely weak, merely stating that project development requires funding and can be facilitated by enabling credit project investment in the early stages (WEF 2025: 11). Allowing early-stage investment fails to justify allowing the issuance and sale of ex-ante credits. Ex-post credits are noted to be preferable while ex-ante credits should be conservative, verified and dynamically adjusted ex-post. There is a significant risk that credits will fail to deliver the promised certified environmental outcomes but, by the time evidence is produced to this effect, remedial action will prove impossible—credits might have been sold or retired, the seller might no longer be in business, and no one has any real incentive to chase parties to old transactions. Ex-ante credits are incompatible with high integrity.

Additionality of Maintenance Credits

The term “maintenance credits” is introduced (and included under additionality HLP5) to distinguish projects aiming to maintain pre-existing on-going activities (e.g. conservation management plans, IPLCs customary practices) from projects aiming at improvements or avoiding imminent losses (WEF 2025: 9). “A maintenance biodiversity credit project should be considered additional if long-term sustainable funding that ensures the long-term maintenance of conservation outcomes is provided to areas not under immediate threat” (WEF 2025: 20). The claim has to be made that there is some medium-term or long-term threat. IAPB (2024: 31) then claims that, especially for IPLCs, “[...] the absence of finance may be deemed a threat of degradation”. So, creating institutional contexts which impose financial threats on IPLCs can be used to promote the need for biodiversity credits. There is a real danger that no ecological additionality may exist but purely adding finance could be used to justify issuing credits, which would be meaningless for preventing biodiversity loss.

More generally, in terms of social and ecological additionality, maintenance credits appear highly problematic. All human activities trying to maintain biodiversity could be regarded as threatened. The problem is that no medium or long term baseline can be

established to determine an additional threat over business-as-usual. While HLP6 discusses baselines it merely calls for robust and credible science. Maintenance credits are a recipe for greenwashing and future scandals, and their inclusion in the *Framework* contradicts its high integrity claims. That ongoing biodiversity preserving activities, especially of IPLCs, may be under threat should lead to legislative protection, enforcement of their rights and avoidance of enforced financial jeopardy rather than treated as an opportunity to profit from creating credits.

Durability

The *Framework* requires that, in order to qualify as credits, positive biodiversity outcomes be long-term, durable and sustainable over a transparently disclosed time frame (HLP7). Yet, durable and sustainable remain undefined, which means the transparency requirement is violated. Positive biodiversity outcomes should aim at permanence in order to avoid untested and untestable claims of reversibility leading to irreversible losses of biological diversity (especially genetic and species levels) regardless of whether an overall habitat is recreated (ecosystem level). The recommendation to merely disclose the timeframe of durability will likely encourage the issuance and trading of cheap credits based on projects with inappropriate or improbable durability.

Secondary Markets

The IAPB (2024: 38) states that it “does not support secondary markets at this stage”, but in contradiction also allows for some secondary transactions to exist today and for their occurrence over time with “appropriate safeguards”. On the topic of tradability (HLP 21) the WEF (2025: 18) addresses the potential for secondary trading as requiring identification of the credits' originator and registration of safeguards covering claims and double counting. An unspecified “appropriate proportion” of profits arising from secondary markets are meant to return to the project proponents.

BCA (2023b: 12) is far less concerned with any qualifications and discusses the potential demand for credits from speculative investment funds: “Companies may soon see investments in biodiversity credits as having the opportunity for appreciation, to be later resold on a potential secondary market at a higher price, generating a profit margin.” When discussing demand for credits, under the heading of tradability/transferability, the BCA (2023b: 20) state that: “The ability or not for a credit to be tradable or transferable in a secondary transaction may influence buyers' interest or willingness to purchase a credit; buyers are likely to prefer a market with more liquidity than less.”

Allowing secondary market trading offers no benefit from a conservation perspective. Speculation will lead to increased price volatility that obfuscates the price signal (Bouleau 2018). This also creates irregular revenues from the sale of credits, thereby penalising farmers, landowners, project developers and governments investing in restoration actions in the hope of these revenues. However, as noted, it is seen as desirable within the High Integrity Coalition for expanding the credit market and making it more attractive for financial investors and speculators.

Creating Markets at Scale

A functioning financial market trading biodiversity credits requires simplified and standardised categories in order to create a limited range of credits, where the fewer the types the greater the market liquidity. Therefore, while biodiversity is acknowledged to be “highly localized and difficult to distil into numbers” this is interpreted as only requiring guidelines flexible enough to accommodate different contexts and ecosystems (WEF 2025: 5). The BCA (2023b: 20) refers to comparability in the following terms: “While biodiversity has local characteristics, in order to be comparable, credits may need to apply one of a standard set of metrics related to different types of ecosystems, species, and geographic areas”. There is a fundamental conflict here between the recognition of local specificity of what is valued and the desire for scaling-up these markets.

Perhaps unsurprisingly then, the High Integrity Coalition makes a series of totally contradictory statements within and across its reports concerning the development of market scale. They claim that a sustainable market requires large scale adoption (WEF 2025: 4, 5), credit markets need to happen “at scale and pace” (IAPB 2024: 13), and they promote linking markets in biodiversity and carbon credits to increase the scale of trading possibilities (BCA 2026). Yet, biodiversity is stated to be “more complex and more locally specific than carbon” (IAPB 2024: 13) and “not fungible” (IAPB 2024: 14, 45) so that local qualities of ecosystems and their context prevent creating a standardised biodiversity unit, i.e. commensurable commodity form. Still, IAPB (2024: 14) propose developing credit markets by standardising approaches to finance projects and identifying “commonalities across biodiversity credits and potential for increasing standardisation” in order to meet the expectations of national and international markets (IAPB 2024: 16).

Simultaneously, they state equivalent units are impossible (IAPB 2024: 16), and that “IAPB does not support international biodiversity offsetting approaches: compensation must be local-to-local and like-for-like” (IAPB 2024: 14). Such offsetting requires equivalence which appears at best both socially and ecologically limited and more often impossible. Markets can only be established based on credits which abstract from context, oversimplify and standardise biodiversity. The attempt to get around the issue is to propose multiple markets for biodiversity credits rather than one global market. However, any linkages between different 'local' markets, with their different units, will again require claiming equivalence. Each market designing its own metrics based on local ecosystems leaves a critical aspect of the *Framework* and its integrity unspecified.

The High Integrity Coalition's desire for large scale markets relies on the ability to transform biodiversity into a standardised financial instrument while failing to address the extensive literature on the problems relating to creating units of equivalence, commensuration and loss of value context. The BCA (2026) definition of a biodiversity credit requires a

measured and evidence-based unit of a positive biodiversity outcome. However, the *Framework* fails to recommend possible metrics. It merely requires that quantification of biodiversity outcomes must be underpinned by sound scientific methods, selected indicators should be representative, and the methodology for converting indicator values into credits should be documented (HLP 9).

IPLCs, Governance, Equity and Fairness

Both market governance and verification require assessment and enforcement of rules, standards and guidelines. This raises a range of questions. Who will set, govern and enforce such arrangements? How will institutions operate across the multiple levels of governance from local to international? How can independent third-party oversight (HLP10) be established to ensure high integrity and accountability and at what cost? There are more questions than answers in the *Framework*.

That many high level principles in the *Framework* mention IPLCs can be understood either as lessons having been learned from the failures of carbon markets, or an intention to target IPLC land to develop future biodiversity and carbon credit projects. That biodiversity is more intact amongst IPLCs explains why the concept of maintenance credits is so heavily promoted. Land and labour for projects is generally financially inexpensive amongst IPLCs, leading to exploitation of the poor. As Martinez-Alier (2002: 30) puts it, “The poor sell cheap, not out of choice but out of lack of power.”

Indigenous communities and their land are also often weakly protected legally and susceptible to expropriation under the guise of inclusive sustainable development and the necessity of resource extractivism. Land grabbing and colonialism have been exacerbated, not ameliorated, by carbon offsets (Bachram 2004; Lang, et al. 2024; Rizzi and Krause 2026). The IAPB are aware of such issues and hence emphasise engaging with IPLCs using co-creation and inclusiveness (IAPB 2024: 13, 35, 71). However, they fail to address why IPLCs

should have any interest in what is being created or, more importantly, what happens if they oppose such schemes. Indeed, the governance proposals prove inadequately specified and superficial in terms of participatory process design.

Participation and Representation

The principles of equity and fairness for people aim to include participation of IPLCs as stewards of Nature as well as their leadership in project co-design, co-implementation and co-governance (IAPB 2024: 30). Where projects impact on IPLCs they are to be given “the option to participate” fully in project design, governance, execution and oversight with “appropriate representation” from all groups, and “meaningful input” throughout the project cycle (WEF 2025: 15). All this sounds superficially like good governance.

Unfortunately, these proposals leave specific roles of different actors vague and the form of participation unspecified. What is meant by appropriate representation and meaningful input and who decides this? Representation is in itself a contentious topic (O'Neill 2001). Who gets to represent IPLCs has proven highly divisive. The conduct of any participatory process encounters the problem of different people's abilities to engage, understand issues and be articulate in potentially challenging group settings. The extensive literature on participatory processes, over fifty years, reveals a wide range of practices and problems, not least of which is unequal power amongst parties (Arnstein 1969; Blackstock 2017; De Marchi and Ravetz 2001; Paulson, et al. 2012; Richards, et al. 2007). The possibility for IPLCs to reject participation in a given project and the consequences of their doing so is not even considered. There are real dangers of getting some easily coerced and/or bribed individuals with little understanding of contract law to sign-up on behalf of a community.

Under HLP 18 a very specific form is envisaged for project governance, namely stakeholder participation. Relevant participants are “stakeholders with legal and customary resource ownership within and in the vicinity of the boundaries of the project” (WEF 2025: 17). Representation is vague with reference to “identified stakeholders” not how they are

identified, and even vaguer “considerations related to gender and other vulnerable groups”. There are no specifications of structure such as proportionality, which affects decision-making weight, or procedures for decision-making. Unanswered questions arise over participant selection, independence, conflicts of interest, and grounds for dismissal.

Harm, Compensation and Value Conflict

The *Framework* includes a “no harm” principle (HLP 15) which is especially concerned with IPLCs. Offset projects, whether direct or indirect, are in fact premised on the creation of harm (loss of biodiversity) and buying relief from the consequences. So, the idea of projects with no harm is clearly fallacious. More generally, all projects will involve conflicts between different interests and values, but when, how and by whom will this be deemed to qualify as harm. Typically conservation involves conflicts over land use change, restrictions on practices and access. Vague references are made to “adequate compensation”, where access is restricted or harm occurs. This appears superficial and has the implicit assumption that all harm can be easily assessed and compensated. The possibility for IPLCs to refuse compensation is absent.

Overall, the principles leave a lot of leeway to those promoting biodiversity credit schemes and their project proponents. They are expected to investigate the cause of the harm and detail a plan to redress and compensate and have in place processes that actively monitor for harm to IPLCs for the duration of the project. What if they do not? There is an absence of detailed recommendations for legal liabilities, penalties and sanctions on credit operators.

Conclusions

Privatising conservation policies by funding them with private financial capital is being heavily promoted via the creation of biodiversity credits. The combined forces of IAPB, BCA and WEF have created a High Integrity Coalition which has proposed a set of principles to reform credit markets. However, their *Framework* comes from a business and finance based set of interests backed by neoliberal politicians who together have promoted the idea that

private finance can fill an assumed funding gap, which is given as the cause of biodiversity loss. The scientific evidence specifies other causes and makes no mention of a finance gap. Public policies involving direct regulatory action, legislation and changes in public finance of biodiversity harming activities are given no attention. Possible conflicts between policy instruments are ignored along with the well documented moral crowding-out of behaviour by economic monetary incentives and the norms of a market.

The high integrity principles themselves appear concerned to address all the problems of environmental credit markets but actually consist of much rhetoric and little substance. A range of specific issues remain unresolved, including incommensurability, additionality, durability of project benefits, secondary markets as irrelevant for conservation, what constitutes a legitimate metric, the conflict between scale for liquidity and local context. The transparency and integrity of the High Integrity Coalition is brought into question by their direct renaming offsetting as 'compensation projects' as if these were not offsetting. In addition, new forms of credits are claimed to be based on non-offset projects but actually allow indirect offsetting that encourages greenwashing and regulatory avoidance. Both approaches undermine claims of integrity.

The superficial and rhetorical presentation is particularly evident when addressing IPLCs and governance issues. Here the importance of targeting the poor who sell cheaply seems a likely outcome with associated land grabbing and exploitation. No serious attention is paid to issues of representation, voice, power, value conflict, or general design of participatory process to meet concerns of equity and justice

Those promoting the *Framework* appear to be operating in their own self-interest rather than that of society or Nature. The actual beneficiaries of such financialised conservation are politicians who can deflect accountability for failing to address biodiversity loss, companies which get a social licence to continue with biodiversity destruction and avoid direct regulation, and financial intermediaries who simply get more money. Overall the aim is

clearly to maintain business-as-usual, promoting profit seeking and economic growth regardless of the associated mechanisms causing biodiversity loss. High integrity credits hide a wolf in sheep's clothing, financiers and speculators dressed as environmentally concerned conservationists.

References Cited

- Arnstein, A. (1969). A ladder of citizenship participation. *Journal of American Institute of Planners*, 26(4), 216-233.
- Bachram, H. (2004). Climate fraud and carbon colonialism: The new trade in greenhouse gases. *Capitalism Nature Socialism*, 15(4), 5-20.
- BCA (2023a), 'Communities and Nature Markets: Building Just Partnerships in Biodiversity Credits' New York: Biodiversity Credit Alliance, UNDP, pp.1-58. Available from: https://www.biodiversitycreditalliance.org/wp-content/uploads/2026/05/BCA-Discussion-Paper_Building-Just-Partnerships-in-Biodiversity-Credits.pdf.
- BCA (2023b), 'Demand-side Sources and Motivation for Biodiversity Credits.' New York: Biodiversity Credit Alliance, UNDP, pp.1-32. Available from: https://www.biodiversitycreditalliance.org/wp-content/uploads/2024/05/BCAIssuePaper_DemandOverview06122023-final.pdf.
- BCA (2024a), 'Definition of a Biodiversity Credit' New York: Biodiversity Credit Alliance, UNDP, pp.1-22. Available from: <https://www.biodiversitycreditalliance.org/wp-content/uploads/2024/05/Definition-of-a-Biodiversity-Credit-Rev-220524.pdf>.
- BCA (2024b), 'Review Mechanisms for Supply-side Quality and Integrity in the Biodiversity Credit Market' New York: Biodiversity Credit Alliance, UNDP, pp.1-32. Available from: https://www.biodiversitycreditalliance.org/wp-content/uploads/2024/05/Review_Mechanisms_for_Supply-side_Quality_and_Integrity_in_the_Biodiversity_Credit_Market_Rev-260424_v2.pdf.
- BCA (2026), 'Linking Biodiversity Credits and Carbon Credits: Clarifying Bundling, Stacking, Stapling, and Related Models' New York: Biodiversity Credit Alliance, UNDP, pp.1-6. Available from: https://www.biodiversitycreditalliance.org/wp-content/uploads/2026/08/BCA_Knowledge-Brief_carbonBD_.pdf.
- Blackstock, K.L. (2017). Participation in the Context of Ecological Economics. In: Spash, C.L. (ed). *Routledge Handbook of Ecological Economics: Nature and Society*. Abingdon: Routledge, 341-350.
- Böhm, S. and Dabhi, S. (eds). (2009). *Upsetting the Offset: The Political Economy of Carbon Markets*. London: MayFly Books.
- Bouleau, N. (2018). *Le Mensonge de la Finance: Les Mathématiques, le Signal-Prix et la Planète*. Ivery-sur-Seine: Les Éditions de l'Atelier.
- Brand, U. (2022). Radical emancipatory social-ecological transformations: Degrowth and the role of strategy In: Barlow, N., Regen, L., Cadiou, N., Chertkovskaya, E., Hollweg, M., Plank, C., Schulken, M. and Wolf, V. (eds). *Degrowth and Strategy: How to bring about social-ecological transformation*. London: Mayfly, 37-55.
- Brinded, L. (2012). Deutsche Bank Chiefs Under Investigation in Carbon Trading Tax Scam.
- Bromley, H. (2024), 'Biodiversity Finance Factbook: COP16 Edition': 1-51. Available from: https://assets.bbhub.io/professional/sites/24/Biodiversity-Finance-Factbook_COP16.pdf. Accessed:21/05/2026.

- Bull, J.W. (2026), 'Nature Finance: We Need (some) Offsets'. Available from: <https://ecoevorxiv.org/repository/view/13000/>. Accessed:15/05/2026.
- Cares, R.A., Franco, A.M.A. and Bond, A. (2023). Investigating the implementation of the mitigation hierarchy approach in environmental impact assessment in relation to biodiversity impacts. *Environmental Impact Assessment Review*, 102, 107214. <https://doi.org/https://doi.org/10.1016/j.eiar.2023.107214>.
- Damiens, F.L.P., Porter, L. and Gordon, A. (2021). The politics of biodiversity offsetting across time and institutional scales. *Nature Sustainability*, 4(2), 170-179. <https://doi.org/10.1038/s41893-020-00636-9>.
- Dasgupta, P. (2021), 'The Economics of Biodiversity: The Dasgupta Review' London: HM Treasury, pp.602.
- De Marchi, B. and Ravetz, J.R. (2001), 'Participatory Approaches to Environmental Policy', *EVE Policy Brief* Cambridge: Cambridge Research for the Environment, pp.18.
- Dempsey, J. (2026). Bake sales to save Nature: Why Wall Street Conservation survives. *Development and Change*, 57(1), 3-26. <https://doi.org/https://doi.org/10.1111/dech.70035>.
- Deutz, A., Heal, G.M., Niu, R., et al. (2020), 'Financing Nature: Closing the Global Biodiversity Financing Gap' Chicago: The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability, pp.1-253. Available from: <https://www.paulsoninstitute.org/conservation/financing-nature-report/>.
- Frey, B.S. and OberholzerGee, F. (1997). The cost of price incentives: An empirical analysis of motivation crowding-out. *American Economic Review*, 87(4), 746-755.
- IAPB (2024), 'Framework for High Integrity Biodiversity Credit Markets' London: International Advisory Panel on Biodiversity Credits, pp.1-96. Available from: <https://www.iapbiocredits.org/framework>.
- IPBES (2019), 'Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services' Bonn: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, pp.1-56.
- Kapp, K.W. (1950). *The Social Costs of Private Enterprise*. New York: Shocken.
- Lang, M., Manahan, M.A. and Bringel, B. (eds). (2024). *The Geopolitics of Green Colonialism: Global Justice and Ecosocial Transitions*: Pluto Press.
- Ling, M., Liu, C., Xu, L., et al. (2024). Carrot and stick incentive policies for climate change mitigation: A survey experiment on crowding out of public support. *Ecological Economics*, 223, 108242. <https://doi.org/https://doi.org/10.1016/j.ecolecon.2024.108242>.
- Lohmann, L. (2006). 'Made in the USA': A short history of carbon trading. *Development Dialogue*, 48(September), 31-70.
- Martinez-Alier, J. (2002). *The Environmentalism of the Poor: A Study of Ecological Conflicts and Valuation*. Cheltenham: Edward Elgar.
- O'Neill, J.F. (2001). Representing people, representing nature, representing the world. *Environment & Planning C: Government & Policy*, 9(4), 483-500.
- OUP. (1998). *The New Oxford Dictionary of English*. Oxford: University Press.
- Paulson, N., Laudati, A., Doolittle, A., et al. (2012). Indigenous peoples' participation in global conservation: Looking beyond headdresses and face paint. *Environmental Values*, 21(3), 255-276. <https://doi.org/10.3197/096327112x13400390125894>.
- Richards, C., Blackstock, K. and Carter, C. (2007), 'Practical Approaches to Participation', *SERG Policy Brief* (1) Aberdeen: Socio-Economic Research Group (SERG), The Macaulay Institute, pp.1-24.
- Rizzi, A. and Krause, T. (2026). The unequal exchange of carbon: calculating value appropriation and atmospheric colonisation through carbon offsetting. *New Political Economy*, 31(3), 387-412. <https://doi.org/10.1080/13563467.2025.2572047>.

- Rockström, J., Thilsted, S.H., Willett, W.C., et al. (2025). The EAT: Lancet Commission on Healthy, Sustainable, and Just Food Systems. *The Lancet*, 406(10512), 1625-1700. [https://doi.org/10.1016/S0140-6736\(25\)01201-2](https://doi.org/10.1016/S0140-6736(25)01201-2).
- Seager, A. (2009). European taxpayers lose €5bn in carbon trading fraud. London: Guardian News and Media Limited.
- Spash, C.L. (2008). How much is that ecosystem in the window? The one with the bio-diverse trail. *Environmental Values*, 17(2), 259-284. <https://doi.org/10.3197/096327108X303882>.
- Spash, C.L. (2011). Terrible economics, ecosystems and banking. *Environmental Values*, 20(2), 141-145. <https://doi.org/10.3197/096327111x12997574391562>.
- Spash, C.L. (2021). The contested conceptualisation of pollution in economics: Market failure or cost shifting success? *Cahiers d'Économie Politique/Political Economy Papers*, 79(1), 85-122. <https://www.cairn.info/revue-cahiers-d-economie-politique-2021-1-page-85.htm>
- Spash, C.L. (2022). Conservation in conflict: Corporations, capitalism and sustainable development. *Biological Conservation*, 269(109528), 1-9. <https://doi.org/https://doi.org/10.1016/j.biocon.2022.109528>.
- Spash, C.L. and Fuselier, A. (2023). Cost Shifting, Competition and Economic Structure. In: Ramos-Martín, J. and Padilla Rosa, E. (eds). *Encyclopedia of Ecological Economics*. Cheltenham: Edward Elgar Publishing, 88-94.
- Spash, C.L. and Hache, F. (2022). The Dasgupta Review deconstructed: an exposé of biodiversity economics. *Globalizations*, 19(5), 653-676. <https://doi.org/10.1080/14747731.2021.1929007>.
- Spash, C.L. and Hache, F. (2026), 'Who Needs (some) Offsets?', *Social Ecological Economics Discussion Paper*: 1-10. Available from: <https://seecentre.org/wp-content/uploads/2026/05/SEECentre-DP-26-no2-May.pdf>. Accessed:09/09/2026.
- Spash, C.L. and Theine, H. (2018). Voluntary Individual Carbon Trading: Friend or Foe? In: Lewis, A. (ed). *Handbook of Psychology and Economic Behaviour*. Cambridge: Cambridge University Press, 595-624.
- Standing, A. (2024), 'Why the \$700 Billion Funding Gap for Biodiversity is Dangerous Nonsense: Implications for the Oceans and Small-Scale Fisheries': 17. Available from: <https://www.cffacape.org/publications-blog/funding-gap-dangerous-nonsense>. Accessed:21/05/2026.
- TEEB (2010), 'The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A Synthesis of the Approach, Conclusions and Recommendations of TEEB' Bonn: UNEP.
- UNEP (2020), 'Zero Draft of the Post-2020 Global Biodiversity Framework' Montreal: United Nations Environment Programme, pp.1-14.
- UNEP (2022), 'Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity' Montreal: United Nations Environment Programme, pp.15.
- UNEP (2024), 'State of Finance for Nature 2023: The Big Nature Turnaround - Repurposing \$7 Trillion to Combat Nature Loss' Nairobi: United Nations Environment Programme, pp.xiii+91.
- UNEP (2026), 'State of Finance for Nature 2026: Nature in the Red - Powering the Trillion Dollar Nature Transition Economy' Nairobi: United Nations Environment Programme, pp.xvii+90.
- Vatn, A. (2005). *Institutions and the Environment*. Cheltenham: Edward Elgar.
- WEF (2025), 'High-level Principles to Guide the Biodiversity Credit Market', *White Paper* Geneva: World Economic Forum, pp.1-25. Available from: <https://www.weforum.org/publications/high-level-principles-to-guide-the-biodiversity-credit-market/>.