WORLD GOVERNMENTS SUMMIT 2025

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Can Financial Innovation Save The Planet's Biodiversity?

A transformative shift is needed to integrate biodiversity within financial systems, investment models, and policy-making frameworks to embed nature's value into economic decision-making.

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Executive Summary

The importance of biodiversity to the global economy and the fight against climate change is becoming increasingly evident, with more than half of global GDP – 55%, or around $58 trillion – moderately or highly dependent on nature.

This dependence has led to the overexploitation of the natural world and the ecosystem services it provides, increasing the threat of ecosystem collapse and a catastrophic loss of biodiversity, with a quarter of all species under threat.

Climate change is accelerating the biodiversity crisis, and the situation will worsen without immediate action. Biodiversity loss and ecosystem degradation are not just catastrophic; they also pose significant risks to many industries and, by extension, the investors that finance them. Yet, finance continues to flow into nature-negative activities, and there is estimated to be a global biodiversity financing gap of $700 billion a year between now and 2030.

However, the tools we need to finance nature-positive activities are starting to emerge after the signing of the Kunming-Montreal Global Biodiversity Framework (GBF) in 2022. It called for the restoration of 30% of degraded ecosystems globally, the conservation of at least 30% of the planet's land and marine areas, and the phasing out of $500 billion annually of harmful subsidies and commitments to mobilize $200 billion annually by 2030.

Financial institutions are critical in driving the transition to a nature-positive future. It is in their interests to do so because the risks of failing to make the transition are huge. Conventional funding approaches are insufficient to deal with the crisis, so innovative market-based solutions that align economic incentives with environmental outcomes are needed. These include debt-for-nature swaps, biodiversity bonds, public-private partnerships, and biodiversity credits and offsets.

However, for nature-based finance to reach its full potential, it also needs the support of governments, which can create the enabling frameworks that will allow innovative solutions to flourish. Governments must also work together to tackle a global problem that demands long-term commitments and solutions.

There is much work to be done to bring nature-based finance into the mainstream – and there is no time to waste.

Recommendations

Financial sector

• Integrate biodiversity into financial systems, investment models, and policy-making frameworks to ensure that it is valued correctly.

• Disclose-against-nature frameworks such as the Taskforce on Nature-related Financial Disclosures (TNFD) to assess and manage nature-related risks and dependencies and encourage the companies in your portfolio to do the same.

• Engage with companies to encourage them to create strategies to address nature-related risks.

• Invest in developing the expertise needed to effectively address nature-related challenges.

• Create innovative financial solutions to increase the financing of nature-positive investments, including natural capital markets and biodiversity-linked financial instruments such as biodiversity credits and debt-for-nature swaps.

Governments

• Create the laws and regulatory infrastructure to enable the development of natural capital markets.

• Develop incentives for the private sector to invest in biodiversity and nature-positive products.

• Work across borders to tackle nature challenges and secure financial commitments for nature conservation.

• Develop consistent and reliable metrics to assess biodiversity impacts and guide investments.

Section 1

Current State Of Global Biodiversity: A Crisis In The Making

As the world faces the urgent realities of climate change and environmental degradation, our economic reliance on nature is becoming pivotal to global policymaking. Biodiversity underpins essential ecosystem services such as clean air and water, pollination, soil fertility, and climate regulation, all of which are critical to sustaining life on Earth and enabling economic activity. With approximately 55% of global GDP – roughly $58 trillion – moderately or highly dependent on nature, the natural world plays a foundational role in sustaining industries such as agriculture, forestry, tourism, and fisheries[1].

The depletion of biodiversity threatens to destabilize these industries, creating risks that extend beyond individual sectors to disrupt entire ecosystems. **Ecosystem collapse triggered by biodiversity loss could lead to irreversible tipping points where natural systems fail to recover, with cascading effects on economies, societies, and global security** through tangible risks to economic stability, food security, and public health.

Biodiversity loss

According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), global species extinction is accelerating, with around one million species already facing extinction, many within decades, unless action is taken to reduce biodiversity loss[3]. The loss of freshwater biodiversity threatens water security for billions of people and is disrupting the water cycles critical for agriculture and energy production[4], while agriculture is one of the largest drivers of biodiversity and habitat loss[5]. Climate change is exacerbating the negative impacts on nature, and if we cannot keep global warming below 1.5˚C, the increased frequency of climate-related events will likely become the dominant cause of biodiversity loss[6].

Economic implications

Without immediate action, this accelerated biodiversity loss will result in the collapse of ecosystem services such as wild pollination and the provision of food and timber, causing a loss of $2.7 trillion to global GDP by 2030[7].

As highlighted by the United Nations Framework Convention on Climate Change, biodiversity and climate risks are deeply interconnected[8], alongside pollution. The adverse effects of climate change, such as rising global temperatures, extreme weather events, sea-level rise and shifting weather patterns, all impact ecosystems and biodiversity. Biodiversity loss weakens the ability of ecosystems to sequester carbon, intensifying climate change, while climate change exacerbates biodiversity loss by altering habitats and increasing the frequency and severity of extreme events. Common drivers, such as deforestation and unsustainable land use, simultaneously reduce biodiversity and increase carbon emissions.

However, these risks are addressed in different ways. Climate action often focuses on mitigation strategies, such as reducing greenhouse gas emissions, which may not always prioritize biodiversity conservation.

For example, afforestation projects that plant non-native species can sequester carbon but may harm local ecosystems. Similarly, renewable energy projects like hydropower can disrupt habitats if not planned carefully.

Current financial flows are exacerbating these challenges by driving negative impacts on nature. Investments in nature-negative activities, such as deforestation for agriculture or fossil fuel extraction, contribute to biodiversity loss and climate change. The global direct and indirect drivers of climate change have led to recent losses of ecosystem services, estimated to cause damage costing between $4 trillion and $20 trillion per year[9].

The direct drivers of change in nature with most impact globally are:

- Land and sea use change
- Direct exploitation of organisms (for example, overfishing and logging)
- Climate change
- Pollution
- Invasive species

These drivers are underpinned by more indirect societal values and behavior, such as:

- Unsustainable production and consumption patterns
- Human population dynamics and trends
- Global trade pressures
- Technological innovations with unintended consequences
- Weak governance systems from local to global levels

Global action on nature

The Kunming-Montreal Global Biodiversity Framework (GBF), the first international agreement on biodiversity, was adopted at the COP15 Biodiversity Conference in 2022 with the aim of halting and reversing nature loss by 2030. It sets out a vision of "a world living in harmony with nature where by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people"[2].

Key elements of the GBF

- Targets for 2030 to restore 30% of degraded ecosystems globally, conserve at least 30% of the planet's land and marine areas, and phase out $500 billion annually of harmful subsidies.
- The establishment of national mechanisms for accountability, such as national biodiversity strategies and action plans.
- Nature-positive goals, including ensuring more nature in the world by 2030 than in 2020.
- Positioning conservation and restoration at the center of economic and societal priorities, ensuring biodiversity delivers essential benefits for all people.
- Commitments to mobilize $200 billion in financing annually by 2030.

Biodiversity loss and ecosystem degradation pose significant risks to many industries and, by extension, the investors that finance them. With more than half of global GDP reliant on nature, financial institutions must realign capital flows toward nature-positive investments to mitigate risks and unlock opportunities. By integrating biodiversity into risk assessments, lending, and investment strategies, the financial sector can drive systemic change, support economic resilience, and align with GBFs vision of "living in harmony with nature" by 2050.

Section 2

Repricing Nature: The Economic Case For Biodiversity

Economic incentives have traditionally prioritized economic growth, often at the expense of conservation and restoration, leading to significant environmental harm. A failure to embed true environmental costs into the price of goods and services, resulting in natural capital depletion, compounds the misalignment. Economic activities driving climate change, biodiversity loss, and land degradation are underpinned by natural capital that is inaccurately valued and priced[10].

Therefore, we must revalue nature and ecosystems to avert catastrophic biodiversity loss. Today's economic models fail to recognize the intrinsic value of natural capital and overlook ecosystems' contributions to services such as clean water, food security, and climate regulation[11]. As a result, biodiversity has remained undervalued and vulnerable, resulting in ecosystem degradation that impacts both ecological and economic resilience. A transformative shift is needed to integrate biodiversity within financial systems, investment models, and policy-making frameworks, ultimately embedding nature's value into economic decision-making.

Frameworks and tools for valuing natural capital

Standardized frameworks to help organizations assess the economic value of natural resources will be critical to repricing biodiversity. The Natural Capital Protocol developed by the Capitals Coalition is one such framework. It enables businesses to understand and quantify their dependencies on natural ecosystems[12] by embedding ecosystem services – such as pollination, water purification, and carbon sequestration – within financial calculations. The protocol makes it easier to incorporate biodiversity into corporate decision-making and reporting, supporting the transition to more sustainable economic practices.

Natural capital markets as a mechanism for biodiversity conservation

Revaluing natural assets can also facilitate natural capital markets, allowing biodiversity assets to be quantified, traded, and conserved. Costa Rica's Payment for Ecosystem Services (PES) program is a pioneering example that compensates landowners for conserving forests[13], thereby preserving biodiversity and maintaining critical carbon sinks. Through this program, Costa Rica has successfully protected more than 25% of its land, demonstrating that financially incentivizing conservation efforts can be effective. Natural capital markets transform biodiversity protection into a viable economic activity, promoting conservation as an asset.

Biodiversity-linked financial instruments

Innovative financial instruments tied to biodiversity outcomes are becoming essential tools for conservation finance. Instruments like the World Bank's Wildlife Conservation Bond (WCB) offer returns based on conservation outcomes, such as specific biodiversity or habitat preservation targets[14]. These bonds align investor returns with the success of conservation projects, creating a powerful incentive for private-sector involvement in biodiversity conservation. By channeling capital toward projects that deliver measurable environmental benefits, biodiversity-linked financial instruments help to align financial interests with ecological sustainability.

By embedding the value of biodiversity in financial models, markets can help to prevent resource depletion and encourage sustainable industry growth. This shift not only fosters ecosystem restoration, sustainable agriculture, and renewable energy but also creates job opportunities and enhances food security. Moreover, by viewing biodiversity as an economic asset, markets are better positioned to allocate capital to conservation projects that build resilience against environmental risks[15]. This integration supports a long-term view of economic and ecological stability, ensuring the preservation of essential natural ecosystems for future generations.

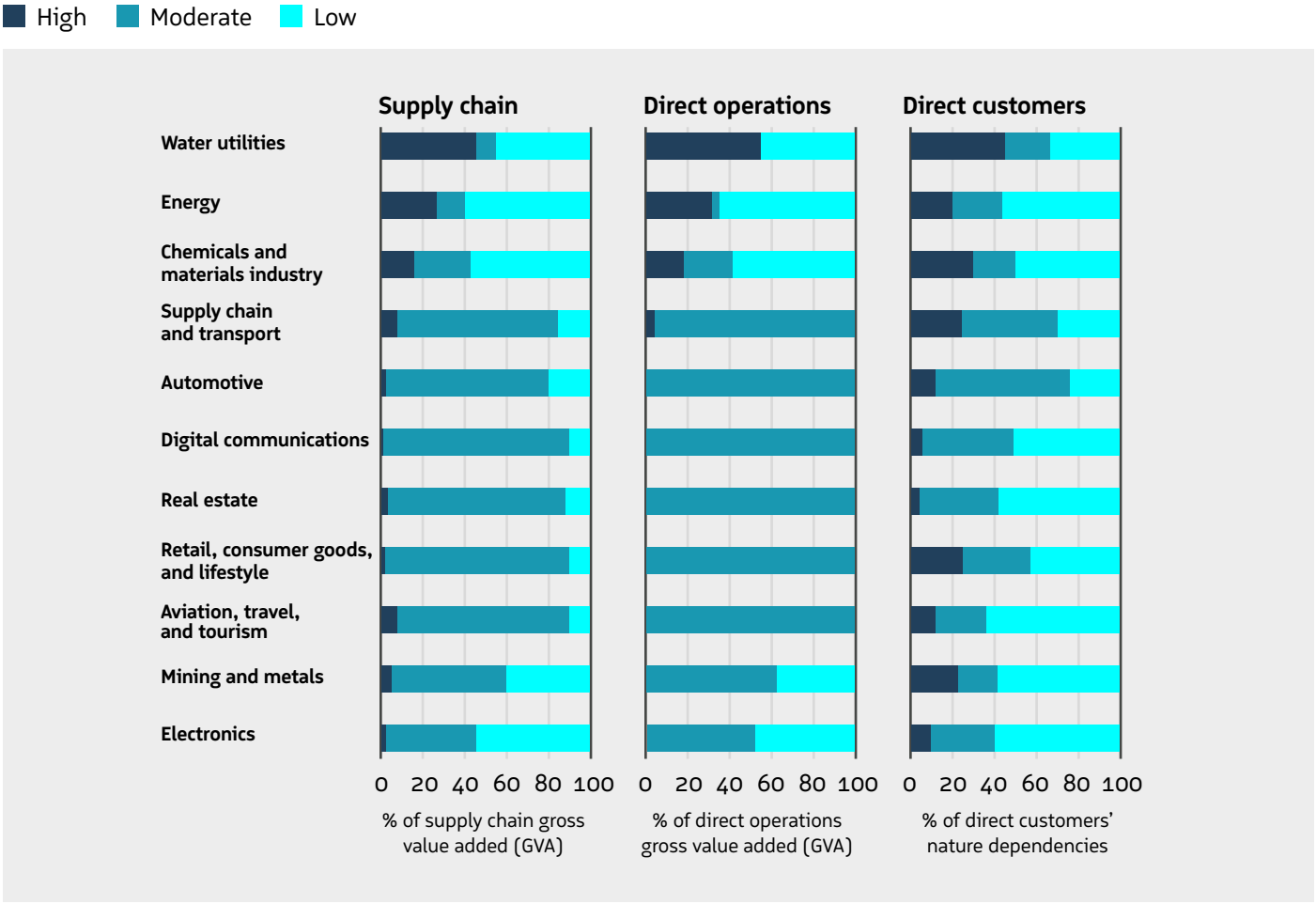
Section 3

The Role Of Financial Institutions In A Nature-Positive Economy

Our economic reliance on nature and its ecosystem services is driving unparalleled biodiversity loss, jeopardizing livelihoods, economies, and climate goals.

Research from PwC and the World Economic Forum indicates that 11 industries have moderate or high dependence on nature for at least 5% of the economic value of their direct operations and supply chains, as Figure 1 shows[16]:

Figure 1: Level Of Nature-Dependence Across Industries



Note: Here, nature dependence measures the degree to which the economic value generated by business activity is exposed to the risk of ecosystem disruption.

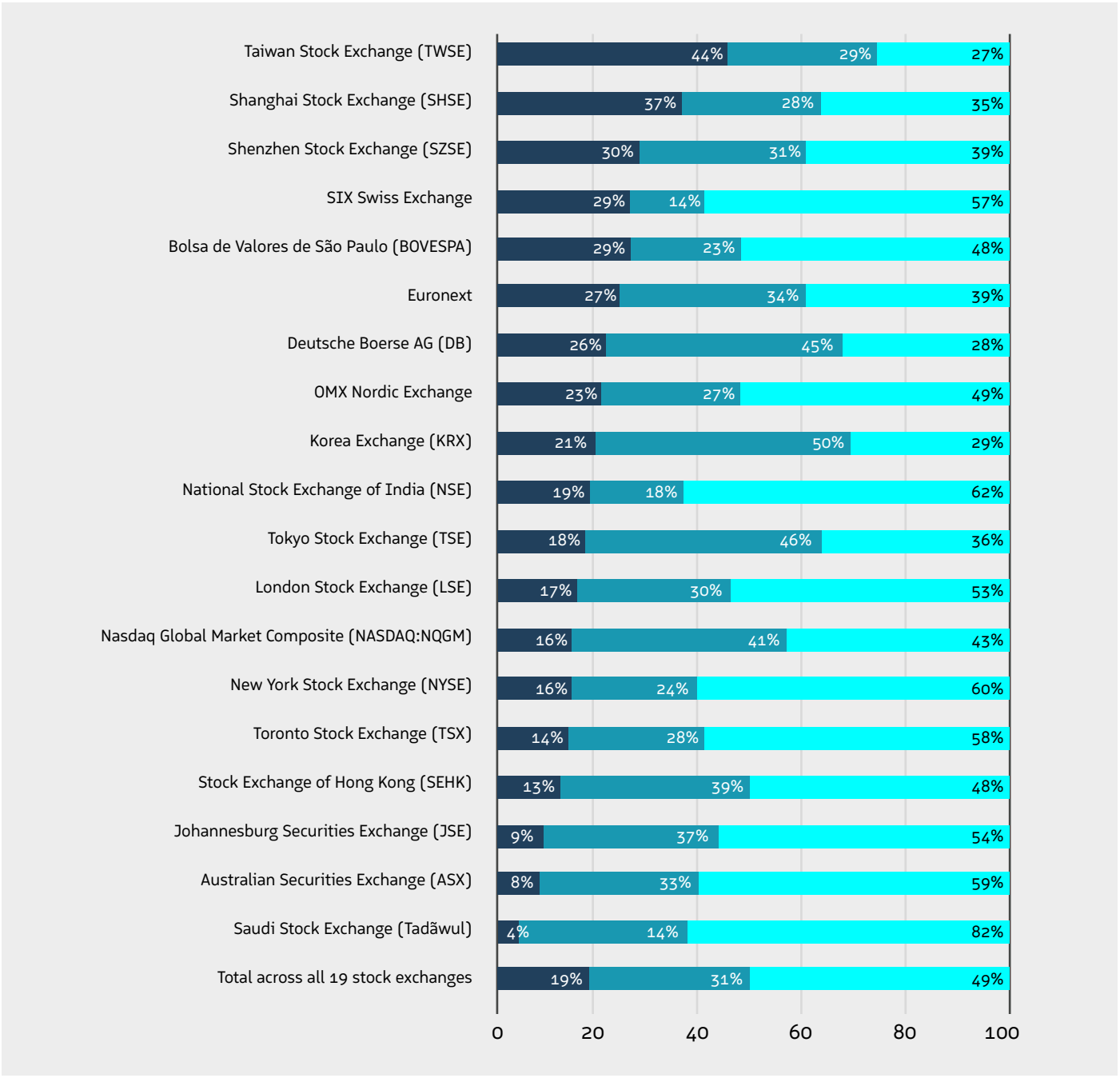
High dependence means that economic value comes from business activities that could fail financially as a result of particular ecosystem disruptions.

Moderate dependence means that economic value comes from business activities that are likely to experience a material reduction in financial returns because of particular ecosystem disruptions.

Low dependence means that economic value comes from business activities that are likely to experience limited material financial effects of ecosystem disruptions.

Source: EXIOBASE, ENCORE database, PwC analysis

More than half of the market value of companies listed on 19 major stock exchanges is exposed to financial risk through high or moderate dependence on nature.



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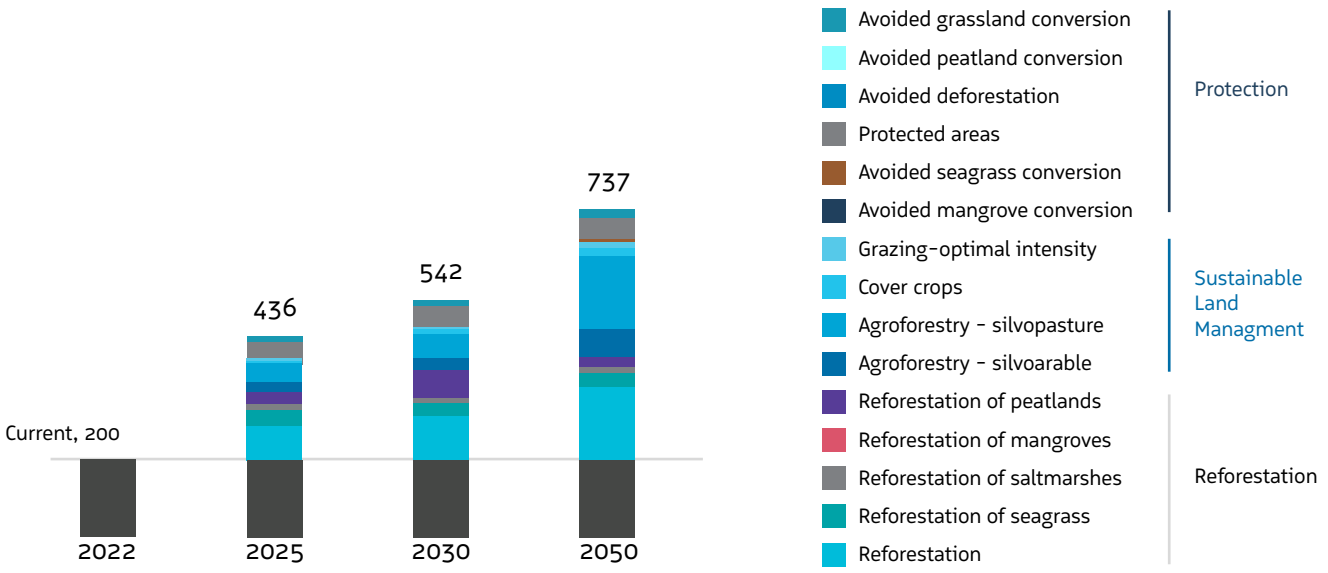
Source: EXIOBASE. ENCORE database. S&P Capital iQ. PwC analysis

At present, some $7 trillion in public and private capital flows into nature-negative activities yearly, most of it ($5 trillion) private finance, compared to just $200 billion invested in nature-positive solutions[17]. Thus, financial institutions will play a critical role in driving the transition to a nature-positive future. Because mitigation, adaptation, and resilience are interconnected, these institutions must evaluate the risks they face due to dependencies within the value chains of the industries they finance. Institutions that continue to support activities that harm rather than safeguard nature are likely to face significant financial and reputational risks.

The GBF estimates there will be a global biodiversity financing gap of $700 billion a year between now and 2030[18], as Figure 2 makes clear.

Figure 2: Additional Annual Investment Needs To Reach Rio Targets, $ Billion [19]



Integrating nature into financial decision-making is essential to redirect capital flows away from harmful activities and toward nature-positive initiatives. This shift is critical to secure a sustainable future and achieve the financial sector's climate and sustainable development objectives.

Governments currently contribute 82% of the financing for nature-based solutions, while the private sector's contribution remains limited to $35 billion[21], highlighting significant untapped potential for financial sector involvement. The World Economic Forum's report, *The Future of Nature and Business*, says transforming food, land, and ocean use, infrastructure, and energy systems could unlock $10.1 trillion in annual business opportunities, generate 395 million new jobs by 2030, and create diverse income streams that bolster local economies[22].

Transformative actions for the financial services industry

To achieve positive outcomes for nature, we must not only make measurable improvements but also stop doing things that damage nature. These are the measures we need to take:

• **Finance nature-based solutions:** Direct capital toward nature-based solutions that protect, restore, and build resilience to biodiversity loss[20].

• **Green financial flows:** Assess nature and biodiversity impacts, phase out nature-negative investments, and trace positive outcomes to individual investments and funds.

• **Disclose against nature frameworks:** Use the Taskforce on Nature-related Financial Disclosures (TNFD) to assess, report, and manage nature-related risks and dependencies, creating supply chain accountability. Set targets and strategies at the board level to identify, track, mitigate, and manage risks and losses and record gains and opportunities.

• **Develop innovative financial mechanisms:** Champion instruments such as green bonds, blended finance, biodiversity credits, and debt-for-nature swaps that mobilize private capital for biodiversity conservation and sustainable development.

• **Engage with high nature impact and risk businesses:** Investors and banks should set clear expectations that companies they finance address nature-related risks, reduce biodiversity impacts throughout their value chains, and promote activities that benefit nature.

• **Build capacity:** Invest in the skills, expertise, structures, and strategies needed to understand, identify, and address risks and foster innovation to create sustainable, nature-positive solutions.

Section 4

Innovative Financial Mechanisms: A Path To Biodiversity Restoration

Traditional conservation funding methods, which rely primarily on government budgets and philanthropic donations, have failed to meet the scale of the biodiversity loss challenge. To bridge this financing gap, innovative financial mechanisms have emerged that foster long-term biodiversity resilience, prevent species extinction, and restore ecosystems. The Kunming-Montreal Global Biodiversity Framework's target 19 seeks to progressively increase the financing toward national biodiversity strategies and action plans by $200 billion annually by 2030[23]. This section explores these mechanisms, emphasizing the role of public-private partnerships (PPPs) and novel financial instruments in aligning financial flows with the GBF.

Nature finance definitions[24] have been developed by Finance for Biodiversity and the United Nations Environment Programme Finance Initiative (UNEP FI), building on definitions proposed by the World Bank Group[25 26]:

01 Nature impact mitigation finance is finance for activities that address adverse impacts on nature in accordance with the World Bank Group's Environmental and Social Framework (ESF) and its International Finance Corporation (IFC)and Multilateral Investment Guarantee Agency (MIGA) Performance Standards.

02 Nature finance is finance that contributes to the nature-positive goal of halting and reversing nature loss and supporting the implementation of the Global Biodiversity Framework.

03 Nature-positive finance delivers measurable positive outcomes for biodiversity or ecosystem services relative to business-as-usual.

04 Nature mainstreaming finance is finance that enables a broader economic transition toward practices aligned with delivering the goal of nature positivity.

Traditional avenues of financing vs. innovative solutions

While conventional funding approaches are vital, they are often insufficient to meet the required scale of biodiversity restoration. Traditional financing mechanisms also tend to be fragmented, project-specific, and short-term. This lack of a sustainable, long-term approach has made it difficult to address complex ecological challenges, such as habitat loss, species extinction, and climate change.

In contrast, innovative financial mechanisms use market-based approaches to attract private capital into conservation efforts. These solutions align economic incentives with environmental outcomes, creating sustainable funding streams for biodiversity projects. By integrating conservation goals with financial returns, these mechanisms encourage broader participation by private investors and financial institutions.

Successful examples include:

Debt-for-nature swap in Seychelles

Seychelles, an archipelago in the Indian Ocean, implemented a groundbreaking debt-for-nature swap in 2015 to finance marine conservation[27]. Facilitated by The Nature Conservancy, this innovative mechanism saw investors buying part of Seychelles' national debt at a discount. In exchange, the government committed to directing debt repayments toward marine conservation efforts, including expanding Marine Protected Areas (MPAs). The initiative enabled Seychelles to expand its MPAs, enhancing the conservation of marine biodiversity. By redirecting debt repayments and involving private investors, the swap established a steady and predictable funding stream for ongoing conservation activities, highlighting the potential for private capital to contribute to conservation financing.

Colombia's biodiversity bond

In June 2024, BBVA Colombia issued the financial sector›s first biodiversity bond, explicitly designed to fund projects aimed at conserving and restoring natural habitats within the country[28]. Unlike conventional green bonds that primarily address climate-change mitigation, this biodiversity bond, backed by the World Bank's International Finance Corporation (IFC), focuses on preserving Colombia's rich biodiversity. The bond's repayment is structured through sources including a carbon tax and allocations from the national budget, ensuring a sustainable financial model. The funds raised go toward initiatives that protect and restore critical ecosystems, contributing to preserving Colombia's diverse species.

Public-private partnerships: Aligning public good with private profits

One of the most promising strategies for mobilizing resources for biodiversity restoration is to use PPPs. These collaborative arrangements allow governments and private entities to co-invest in ecosystem restoration projects, aligning public interests with private returns. By leveraging the strengths of both sectors, PPPs can drive more efficient use of resources, scale up conservation projects, and reduce risks associated with long-term investments.

Coral reef restoration in Chonburi, Thailand

In Chonburi Province, Thailand, a PPP was established to restore degraded coral reefs[29]. The initiative involved local government agencies, private-sector stakeholders, and community groups. Private companies provided funding and technical support, while government agencies facilitated regulatory approvals and community engagement. The collaboration led to the successful transplantation of coral fragments and the installation of artificial reefs, enhancing marine biodiversity and promoting sustainable tourism.

Dolores River Restoration Partnership in the USA

The Dolores River Restoration Partnership (DRRP) is a collaborative effort involving federal and state agencies, private landowners, non-profit organizations, and local communities[30]. The partnership restores riparian habitats along the Dolores river, which flows through Colorado and Utah. Private landowners contribute land access and local knowledge, while public agencies provide funding and technical expertise. This PPP has successfully removed invasive plant species, restored native vegetation, and improved wildlife habitats, demonstrating the effectiveness of coordinated restoration efforts across public and private lands.

Innovative financial mechanisms: Biodiversity-linked bonds and biodiversity credits

New financial instruments are being developed to accelerate the flow of capital toward biodiversity, including biodiversity-linked bonds, biodiversity credits, and nature-based investment products. Such mechanisms allow investors to support biodiversity while achieving financial returns, transforming conservation efforts into viable business opportunities.

Nature markets and carbon markets are also increasingly intersecting, creating innovative financial mechanisms that address both climate change and biodiversity loss[31]. This convergence offers opportunities to develop integrated solutions that value and protect natural ecosystems.

Many carbon offset projects, especially those involving nature-based solutions like reforestation and forest conservation, inherently provide additional benefits, including enhancing biodiversity. Explicitly recognizing these co-benefits can increase the value of carbon credits and attract investors seeking to support broader environmental outcomes[32].

Beyond carbon credits, biodiversity credits are also emerging as a distinct financial instrument aimed at quantifying and monetizing the conservation of biodiversity[33]. These credits fund projects that protect or restore ecosystems, offering a complementary approach to carbon markets.

While the integration of nature and carbon markets holds promise, certain challenges remain, particularly concerning quantification of biodiversity benefits[34]. This is complicated by the localized and non-fungible nature of biodiversity, the need to ensure the credibility of both carbon and biodiversity credits[35] to prevent greenwashing and maintain investor confidence, and to create real economic value for local communities involved in conservation[36], which is essential for the sustainability of these markets.

Biodiversity-linked bonds

Biodiversity-linked bonds are debt instruments that tie financial returns to achieving specific biodiversity outcomes. This innovative approach reduces the financial risk for governments and conservation organizations while attracting private-sector funding to critical biodiversity projects. Similarly, the concept of green sovereign bonds is expanding to include biodiversity-linked objectives, in which governments issue debt to finance ecosystem restoration, sustainable agriculture, or coastal protection. The returns are linked to measurable biodiversity targets, such as reforestation rates, wetland restoration, or species recovery metrics. These bonds not only raise capital but also enhance accountability, as the success of conservation outcomes is directly tied to financial incentives.

World Bank's Wildlife Conservation Bond

In March 2022, the World Bank launched a $150 million Wildlife Conservation Bond, commonly known as the Rhino Bond[37]. This five-year bond channels investments to support black rhino conservation in South Africa. Returns are directly linked to the growth rate of the black rhino population in two reserves in the country. If conservation efforts lead to an increase in the rhino population, investors receive higher returns, aligning financial outcomes with biodiversity conservation success.

IDB Invest's Amazonia Bond

In June 2024, IDB Invest, part of the Inter-American Development Bank, issued a 50 million Brazilian real ($9 million) bond named the Amazonia Bond[38]. It aims to finance green and social projects in the Amazon region, focusing on conservation and sustainable development. The initiative is considered a precursor to a larger series of Amazonia Bonds being developed with the World Bank to attract funding for conservation projects and alternatives to logging and agriculture. The framework supports countries such as Brazil, Colombia, Peru, Bolivia, and Ecuador in protecting the rainforest, which is vital for absorbing greenhouse gases and housing diverse species.

Biodiversity credits

Another emerging solution is the creation of biodiversity credits, which operate similarly to carbon credits. These credits represent measurable units of biodiversity gain, such as the restoration of a hectare of degraded land or the reintroduction of an endangered species. Companies can purchase biodiversity credits to offset their environmental impact or to meet regulatory requirements. This system creates a market for biodiversity protection, incentivizing businesses to invest in conservation projects.

New Zealand's sustainable development units

In New Zealand, a biodiversity credit system known as sustainable development units has been introduced to fund conservation projects[39]. Companies buy the units to support verified biodiversity outcomes, such as habitat restoration and species protection, in designated areas, including mountain sanctuaries. This approach enables businesses to contribute to conservation efforts without claiming offsets for their environmental impacts, thereby fostering a direct investment in biodiversity enhancement.

Wallacea Trust's biodiversity credits methodology

The UK-based Wallacea Trust has developed a biodiversity credits methodology that focuses on quantifiable biodiversity gains[40]. This approach involves creating a "basket of metrics" to assess and monitor biodiversity improvements, ensuring that credits represent tangible conservation outcomes. By standardizing how biodiversity gains are measured, this methodology helps develop a transparent and credible market for credits, encouraging investments in conservation projects with verifiable impacts.

Section 5

The Role of Government Policy In Scaling Innovative Financial Mechanisms

Government policies are crucial to fostering an environment conducive to innovative conservation financing. They set regulatory frameworks, provide incentives, and reduce barriers to entry for private capital. Governments can accelerate the adoption of innovative financial instruments by implementing tax breaks, subsidies, or grants for biodiversity-linked investments. Moreover, governments can standardize biodiversity metrics, ensuring transparency and establishing clear guidelines for reporting and verification. This can reduce investment risks and build investor confidence, making it easier for private capital to flow into biodiversity projects.

To ensure global alignment and harmonized standards, it is essential that frameworks and guidelines are interoperable across regions. Platforms such as the G20, BRICS, and multilateral institutions can be pivotal in facilitating this. Developing shared principles for biodiversity financing and establishing mechanisms for cross-border collaboration would drive consistency and reduce fragmentation in conservation finance practices. For instance, a unified framework could standardize biodiversity credit methodologies, enabling their acceptance and trading across multiple jurisdictions.

Harmonized frameworks would also facilitate the comparison of biodiversity metrics, enhancing investor confidence and fostering greater private-sector participation. Leveraging the influence of platforms like the G20 and BRICS would enable governments to align national policies with global goals, promoting innovation in financial mechanisms while addressing region-specific challenges.

Examples include:

Mongolia's Project Finance for Permanence (PFP) agreement

In April 2024, Mongolia launched the Eternal Mongolia initiative[43], a landmark Project Finance for Permanence (PFP) agreement aimed at conserving 35.6 million acres (144,000 square kilometers) of the nation's grasslands and waters, including the world's last major temperate grassland. This $198 million initiative combines a $71 million transition fund supported by global donors with a $127 million commitment from the Mongolian government over 15 years. The PFP model secures policy changes and funding in a single agreement, tying fund disbursement to specific environmental and social objectives. This approach enables large-scale conservation efforts and sustainable financing, ensuring conservation goals are met before funds are released.

United States' Conservation Finance Program

The US Forest Service's Conservation Finance Program, housed in the National Partnership Office, aims to increase and unlock new sources of funding and financing[44]. The program focuses on developing innovative finance models that engage private capital to support forest restoration, watershed health, and recreation infrastructure. By creating policy frameworks that facilitate PPPs, the program leverages private investment to achieve conservation goals. The Innovative Finance for National Forests (IFNF) program is an example that provides financial support and technical assistance to partners developing finance models that leverage capital beyond federal appropriations. Since its inception, IFNF has provided grant funding to multiple projects, piloting approaches to financing wildfire resilience, sustainable recreation, and watershed health.

The role of policy and regulation in biodiversity and financial innovation

Government policies and regulations provide a vital framework for aligning financial markets with the management of biodiversity loss and ecosystem degradation[41]. Policymakers can drive capital toward biodiversity-friendly investments by designing frameworks that account for environmental and financial resilience. Such policies enable conservation efforts and foster sustainable economic growth. By incentivizing biodiversity within financial markets, governments can attract private capital, reduce environmental risk, and promote ecosystem resilience, which are crucial to sustainable development. Moreover, incentivizing biodiversity within financial markets helps safeguard resources and ecosystems critical for food security, clean water, and climate regulation.

An example is Japan's National Biodiversity Strategy and Action Plan (NBSAP) 2023-2030, which sets out a roadmap for the country to become nature-positive by 2030. One of its strategic actions is the promotion of investments and financing by financial institutions and investors for the conservation and restoration of biodiversity1[42].

Integrating biodiversity into climate risk frameworks

Policies that integrate biodiversity within climate risk frameworks can significantly enhance financial institutions' risk assessment and management capabilities, allowing for a more holistic view of environmental impact. By mandating biodiversity risk assessments and disclosures, governments can facilitate the alignment of financial practices with conservation goals. With the TNFD's guidance, financial institutions have a structured approach to biodiversity risk management, setting the stage for future regulatory standards that protect biodiversity.

Promoting biodiversity offset programs

Biodiversity offsets compensate for the environmental impacts of development activities, ensuring that development goals are balanced with conservation objectives. Programs such as Australia's Environmental Offsets Policy illustrate how governments can mandate biodiversity offsets to achieve a net gain or, at minimum, no net loss in biodiversity[45]. These offsets require developers to make ecological contributions that counterbalance their environmental footprint, creating an economic framework for conservation within projects.

To expand the impact of such programs, governments could establish consistent standards for biodiversity offsets, encouraging their adoption across different regions and industries. This would not only promote biodiversity on a global scale but also allow offset programs to become integral to the development process. By creating transparent accountability measures, regulatory frameworks ensure that biodiversity offsets fulfill their intended purpose. Australia's Environmental Offsets Policy exemplifies this approach by holding developers accountable for biodiversity impacts and can be replicated by other countries aiming to balance development and conservation.

Building national legal and regulatory infrastructure for natural capital markets

Natural capital markets are a new way to value ecosystem services such as carbon sequestration, water purification, and biodiversity conservation. They need regulatory frameworks that ensure markets are transparent, standardized, and sustainable[46].

In designing regulatory standards for natural capital markets, governments can create clear definitions for tradable biodiversity credits, allowing market participants to engage with these assets confidently. For instance, the UK's Environment Bill mandates a "biodiversity net gain" requirement, obliging developers to enhance biodiversity as part of their projects[47]. This legislation sets a benchmark for countries that aim to embed biodiversity into market mechanisms, creating accountability and opportunity for biodiversity markets to thrive.

Forest and Landscape Restoration Implementation Plan (FOLAREP)

FOLAREP is a five-year action plan representing Kenya's commitment to restore millions of hectares of deforested and degraded landscapes. It aligns with national and international obligations concerning forest coverage and focuses on strengthening policy frameworks, restoring forests, mobilizing resources, promoting inclusive nature-based value chains, and enhancing research and knowledge management.

Cross-border and cross-industry collaboration for biodiversity innovation

Conserving biodiversity is a challenge that transcends national borders, making international collaboration essential. Multilateral frameworks such as the Convention on Biological Diversity (CBD) provide the foundation for coordinated biodiversity management, enabling countries to work toward shared conservation objectives[48]. This level of co-operation is crucial for scaling up biodiversity initiatives and addressing cross-border environmental challenges.

Collaboration across industries is equally important, and the European Union's Biodiversity Strategy 2030 demonstrates how cross-sector and cross-country collaboration can be structured to drive biodiversity conservation at scale[49]. This strategy aligns conservation goals with economic policies, creating a regional framework for ecosystem restoration, sustainable land use, and biodiversity management. By building regulatory synergies across countries, the EU provides a replicable model for global biodiversity policy alignment, helping governments and industries collectively address biodiversity loss.

Incentives for private-sector investment

To scale biodiversity finance, it is essential to incentivize private-sector investment. There are several ways that governments can achieve this. Tax incentives, green subsidies, and financial grants can reduce the cost of biodiversity projects, making them more appealing to investors. Governments can use tax incentives and subsidies to stimulate biodiversity-aligned projects, fostering a favorable investment climate. For instance, the Netherlands' Green Funds Scheme offers tax benefits to companies investing in sustainable projects[50]. Public-private partnerships can also mobilize capital for large-scale conservation initiatives as they allow governments to share costs and risks with private entities. By encouraging private-sector engagement through fiscal incentives, policymakers can build a diverse coalition for biodiversity that includes corporations, financial institutions, and conservationists.

Section 6

The Future Of Financial Innovation For Biodiversity

The financial sector is at a pivotal juncture in the quest to preserve global biodiversity. Innovative financial mechanisms, such as Costa Rica's Payments for Environmental Services (PES) program, show the potential of aligning economic incentives with conservation goals. Since its inception in 1997, the program[51] has provided direct payments to landowners for maintaining forest cover, significantly increasing forested areas and protecting vital ecosystems.

However, several challenges must be addressed to fully harness financial innovation for biodiversity conservation worldwide:

01 Effective biodiversity conservation requires coordinated efforts across borders. The recent COP16 summit in Cali, Colombia, highlighted how difficult it is to secure substantial financial commitments for nature conservation[53], underscoring the need for enhanced international collaboration.

02 It is essential to develop consistent and reliable metrics to assess biodiversity impacts and guide investments[54]. The lack of standardized measures can impede the effectiveness of financial instruments aimed at conservation.

03 Biodiversity conservation often requires sustained investment over extended periods. Financial institutions must develop strategies that balance immediate returns with long-term ecological benefits to ensure the durability of conservation efforts.

04 Governments should prioritize funding for public goods, alongside incentives and regulations, that catalyze private finance for sustainable land management and restoration. Innovative financial instruments such as green bonds, blended finance, and debt-for-nature swaps can further boost private-sector action.

Addressing these challenges involves navigating regulatory complexities and managing investment risks. For instance, the emergence of biodiversity credits offers a promising avenue for financing conservation but also presents risks related to market integrity and potential misuse. Ensuring robust governance and transparency in these markets is crucial to ensure their legitimacy[52].

While financial innovation promises significant advances in biodiversity conservation, realizing its full potential will require concerted efforts. Governments and businesses can align economic incentives with environmental goals by leveraging innovative financial instruments, such as biodiversity-linked bonds and biodiversity credits, and fostering PPPs. Only by embracing these new models can we unlock the capital needed to preserve our planet's most precious natural assets and create a sustainable future for all.

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a. Restoration and conservation of biodiversity or ecosystem services.

b. Reduction of the direct drivers of biodiversity or ecosystem services loss.

c. Integration of nature-based solutions across economic sectors

d. Design and implementation of policy, tools, or other sectoral instruments enabling (a) to (c).

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