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Biodiversity Finance

What is Biodiversity and Why is it Important?

Biodiversity can be defined as the "variety of life in our natural world" and is measured at the species level as the number of different plants, animals, fungi, algae and microorganisms that share a certain home region. Biodiversity is a key indicator of the health of an ecosystem. Areas with particularly high levels of biodiversity are considered biodiversity hot spots and provide habitat to numerous endemic species, which are species unique to that place.

For an example of biodiversity public communication materials, see this Government of Canada brochure.

Indonesia's Biodiversity

Indonesia is one of the world's 17 "megadiverse" countries, with two of the world's 25 "hotspots", 18 World Wildlife Fund's "Global 200" ecoregions and 24 of Bird Life International's "Endemic Bird Areas". It also possesses 10% of the world's flowering species (estimated 25,000 flowering plants, 55% endemic) and ranks as one of the earth's centers for agrobiodiversity of plant cultivars and domesticated livestock. About 12% of the world's mammals (515 species) occur in Indonesia, ranking it second, after Brazil, at the global level. About 16% of the world's reptiles (781 species) and 35 species of primate place Indonesia fourth in the world. Further, 17% of the total species of birds (1,592 species) and 270 species of amphibians place Indonesia in the fifth and sixth ranks, respectively, in the world.

For further information, the UNEP country fiche for Indonesia provides a summary description of Indonesia's biodiversity, as well as other environmental pillars, with links to additional resources.

The Global Biodiversity Framework (GBF) and Biodiversity Financing

In 2022, in Montréal Canada, 196 countries adopted the Kunming-Montreal Global Biodiversity Framework (GBF) committing to halt and reverse biodiversity loss by 2030. They agreed to redirect $500 billion of harmful subsidies toward biodiversity and mobilize an additional $200 billion per year for conservation and restoration. However, biodiversity conservation remains severely underfunded, with recent research (2022 Nature Conservancy) showing upwards of a $700 billion gap between current annual funding and what's needed by 2030 to maintain ecosystem integrity.

Governments have contributed the lion's share of global nature finance to date, however, there is an increasing call on the private sector to play a role in financing nature-positive projects. Companies face

expectations to report on their nature-related risks and dependencies. Funding nature protection and restoration can also help companies manage ecosystem-related risks to their operations, such as supply chain disruptions, forest and plantation damage, and compliance with evolving nature-related policies.

This World Economic Forum Briefing Paper (2022 WEF) provides an overview of biodiversity credit markets with selected case study examples.

Biodiversity Loss and Climate Change

There are many signs that biodiversity loss is now at an unprecedented level as a direct result of human activities. A landmark global assessment report released in 2019 found that one million animal and plant species now face extinction – more than at any other point in human history.

Many of the options for addressing climate change, such as stopping deforestation and restoring natural ecosystems, come with obvious benefits for biodiversity. However, other proposed climate solutions, such as burning crops for energy, can create significant risks for the natural world.

The pace of climate change can be measured through global temperature rise and increasing greenhouse gas emissions, however, understanding the extent of human-caused biodiversity loss is far more complex. This is largely because humans can affect biodiversity in varied and far-reaching ways – for example, by destroying habitats, causing species extinctions or converting diverse ecosystems to monocultures. Climate change also poses a major risk to biodiversity.

For further discussion, and references to many international reports, see the WEF Explainer: Can climate change and biodiversity loss be tackled together?

Biodiversity Credits

Biodiversity credits are instruments that allow individuals and companies to invest in environmental projects that contribute to a richer biodiversity or restore nature. This could be in a rainforest, ocean, grasslands or other habitats globally. A credit would record where the environmental action has taken place, who has developed it, and how it is measured and checked.

The Biodiversity Credit Alliance has proposed the following definition of a biodiversity credit:

> *"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."*

While some organizations and governments see biodiversity credits and other market-based initiatives as a promising way to scale up private finance for nature, others see them as risky. The Campaign for Nature, for example, has expressed concern about the "illusion of biodiversity credits" commenting that "inflated claims regarding the potential scale and projected rapid growth of voluntary biodiversity credits could lead to an abdication by governments of their public responsibilities, allowing them to think that somehow 'innovative finance' from the private sector will play a significant role in meeting the financial promises made in the GBF."

There are four key terms underlaying biodiversity credits as a proposed financial instrument:

- ***Positive biodiversity outcome*** – an improvement in measures of biodiversity, a reduction in threats to biodiversity or prevention of an anticipated decline in measures of biodiversity.
- ***Measured and evidence-based*** – as well as a defined geographic area, measurement of biodiversity might include habitat condition, diversity and abundance of taxonomic groups, and metrics that measure threats.
- ***Durability*** – the ability of a project to ensure that biodiversity outcomes on which credits are based are likely to endure for an extended period.
- ***Additionality*** – credits can only be assigned to biodiversity outcomes that are attributable to the project intervention, and would not have otherwise happened.

Why Would Private Sector Companies Buy Biodiversity Credits?

Private sector companies might consider investment in a biodiversity conservation project or purchase of biodiversity credits for a number of reasons:

- They ***have*** to – because of government regulation (such as mitigation or restoration actions for habitat loss from change in land use).
- They ***want*** to – because of company governance or shareholder requirements (as part of corporate social responsibility).
- They ***see value*** – in differentiating their company or products from others (by association with conservation of natural areas or species).
- They seek to ***offset impacts*** – if avoidance, mitigation or restoration actions are insufficient.

Biodiversity conservation actions, such as purchase or investment in biodiversity credits, must be seen to be credible and effective. This entails either government guidance and oversight (for mandatory requirements) or trusted monitoring, reporting and verification (for voluntary or advertised actions).

Evolving Frameworks and Standards for Biodiversity Credits

There are many global and national scale initiatives aiming to establish a common framework for biodiversity financing, involving both mandatory and voluntary biodiversity credits. The following examples illustrate the diversity of these efforts, with particular relevance to the Indonesian context:

- BIOFIN Indonesia aims to strengthen the country's national biodiversity financing framework and close the financing gap for the conservation and sustainable use of biological diversity. Under BIOFIN, the ecological fiscal transfer (EFT) mechanism provides guidelines for local government in allocating financial assistance for conservation and environmental preservation, aiming to enhance environmental management performance and incentivize sub-provincial governments to prioritize environmental conservation efforts (Central Java Governor Regulation No. 61/2023).
- The Indonesia Public Agency for Environment Fund Management (BPDLH) is intended to play a significant role as the "financing hub" for environmental programs in Indonesia, including initiatives such as green bonds and grants related to accounting for carbon and environmental values. A 2020 Climate Policy Institute report provides a useful overview.

- Private sector and non-government organizations have developed tools and standards – for example, Verra has prepared guidance materials for Climate, Community and Biodiversity (CCB) projects that contain high conservation values.
- The International Advisory Group on Biodiversity Credits, established in 2023, has working groups addressing measurement, demand, supply, stewardship and governance.
- The Science Based Targets (for Nature) Network has prepared related guidance for companies.

Ongoing Challenges Regarding the Integrity of Biodiversity Credits

As well as establishing government regulation and oversight, there are several critical issues that have to be addressed if biodiversity credits are to have integrity and deliver on their promise of achieving positive biodiversity outcomes:

Fungibility – Currently, there is no commonly accepted definition of biodiversity credits, what a buyer gets when they buy them, and claims that can made about the resulting outcomes.

Credibility – biodiversity credits suffer from the same dynamics that have undermined the credibility of carbon markets, including problems around additionality, permanence, measurement, leakage, transparency, scalability, double counting, and equity.

Justice and Equity – Introducing middlemen to the funding process and removing the direct link between funders and recipients, who are the frontline stewards of the most important biodiversity areas, risks diluting the funding that actually reaches the ground where it is needed.

Double Counting – Biodiversity credits are likely to suffer the same problems as carbon offsets where both a buyer and a seller's host country claim credit for the same biodiversity outcome.

About FINCAPES

The Flood Impacts, Carbon Pricing, and Ecosystem Sustainability (FINCAPES) project is a collaborative, gender-responsive initiative funded by Global Affairs Canada. Over a 5.5-year period, jointly undertaken by the University of Waterloo's Faculty of Mathematics and Faculty of Environment, the project supports Indonesia in adapting to climate change, mitigating its impacts, and conserving biodiversity in a socially and economically sustainable manner. Aligned with Indonesia's priorities, FINCAPES enhances the nation's capacity in key areas: forecasting and mitigating financial impacts of climate-change-induced floods, promoting Nature-based Solutions for peatland and mangrove restoration, and strengthening climate finance policy frameworks with a focus on carbon financing mechanisms.

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