



Biodiversity Finance: The Next Frontier?

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March 1, 2024

Presentation to Center for Responsible Investing Conference
WP Carey School of Business, Arizona State University



Cornell
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Part I

What is biodiversity?
What is biodiversity loss?

What is biodiversity?

Biodiversity, the diversity of

- genes
- species
- populations of species
- ecosystems
- nature's contributions to people

Natures Contributions to People

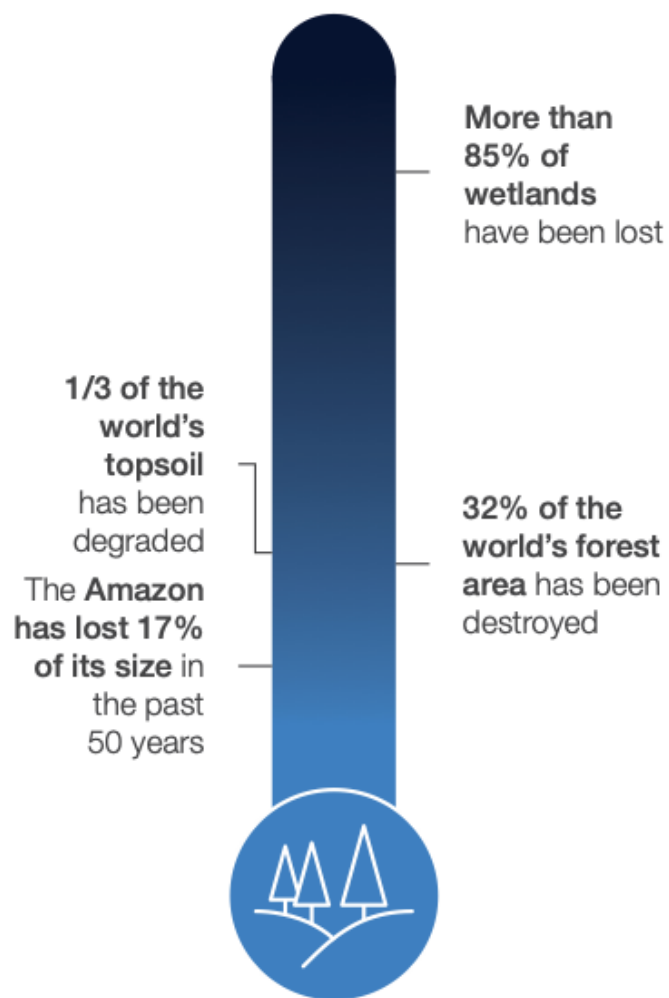
- food and timber provision
- pollination
- water provision and purification
- fisheries production

Biodiversity is natural capital

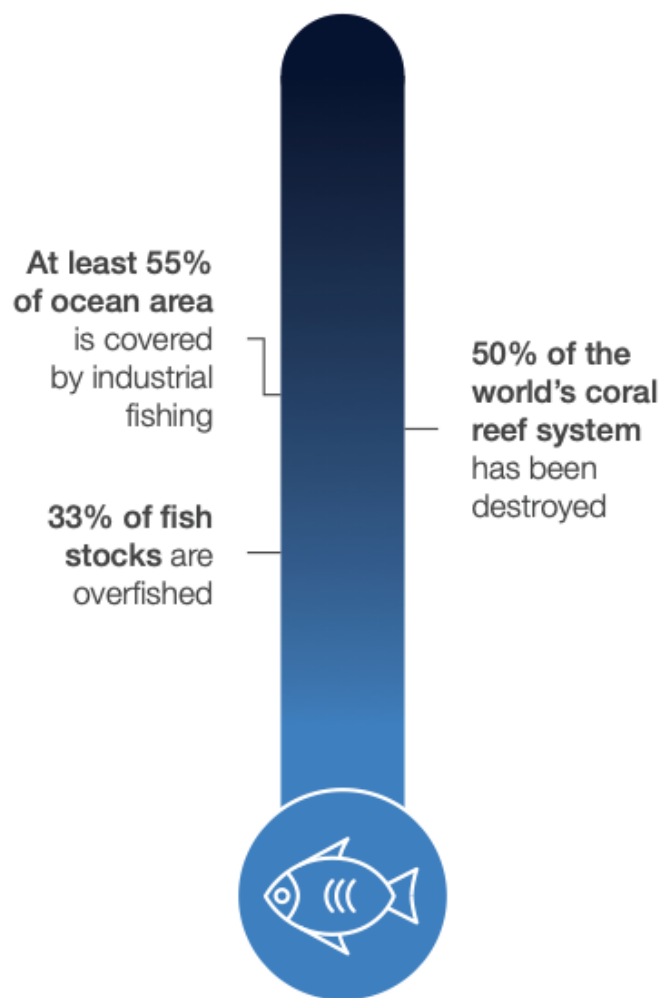
- carbon sequestration and storage
- flood control and storm surge protection
- regional weather control
- soil fertility
- spiritual and cultural renewal



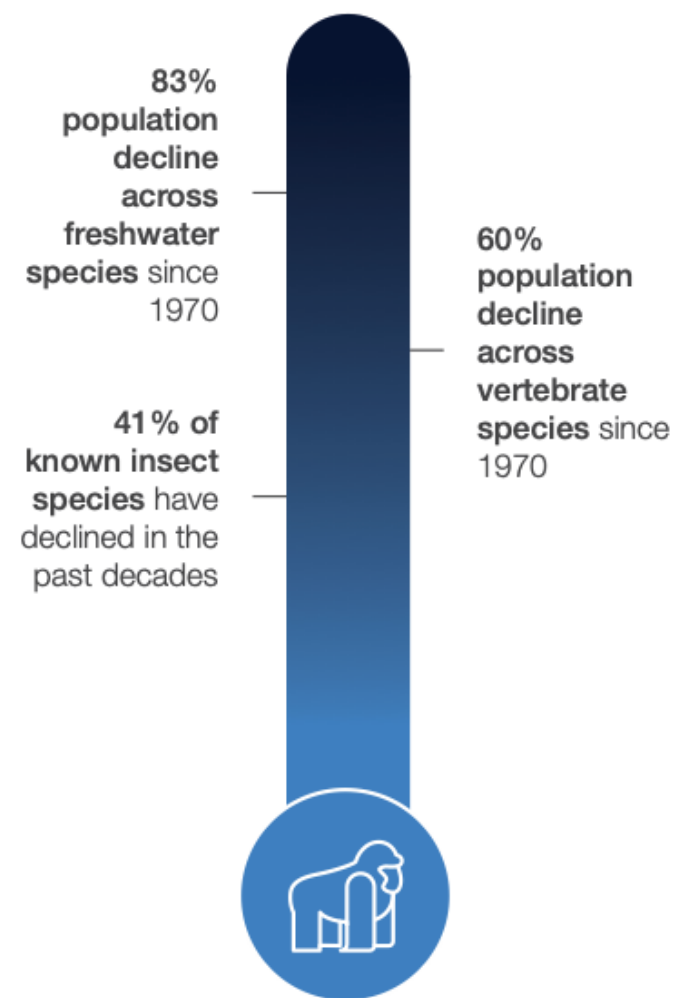
Human activity is eroding biodiversity



Terrestrial ecosystems



Oceanic ecosystems



Species



World Economic Forum's Nature Economy Report 2020

- \$44 trillion in value creation is moderately or highly dependent on nature and its services

Nature risk become material for business in 3 ways

- Dependence directly on nature for operations, supply chain performance, real estate asset values, physical security, and business continuity
- When direct and indirect impacts of business on nature loss triggers negative consequences (losing customers or markets, legal action, regulatory changes)
- Nature loss causes disruption to society and the markets which can manifest as business and market risk

Biodiversity Loss as a Severe Global Risk

“Identify the most severe risks on a global scale over the next 10 years”

■ Economic ■ Environmental ■ Geopolitical ■ Societal ■ Technological

1st Climate action failure

2nd Extreme weather

3rd Biodiversity loss

4th Social cohesion erosion

5th Livelihood crises

6th Infectious diseases

7th Human environmental damage

8th Natural resource crises

9th Debt crises

10th Geoeconomic confrontation

Source: World Economic Forum Global Risks Perception Survey 2021-2022

Part II

What is Biodiversity Finance?

A Biodiversity Finance Imperative

The Economics of Biodiversity: The Dasgupta Review



The State of Finance for Nature in the G20

Leading by example to close the investment gap

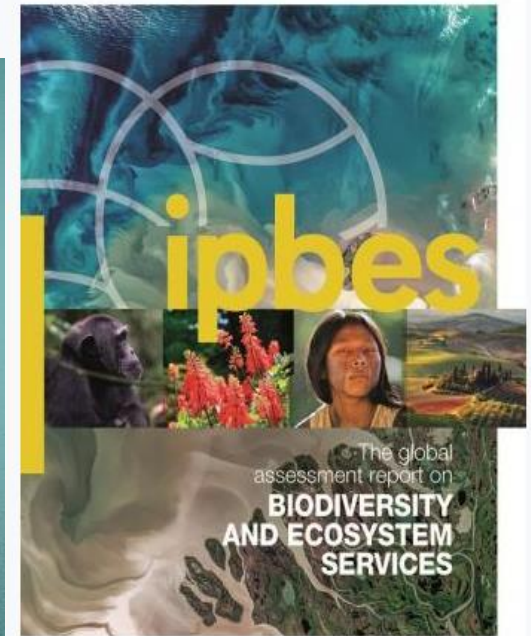
UN
environment
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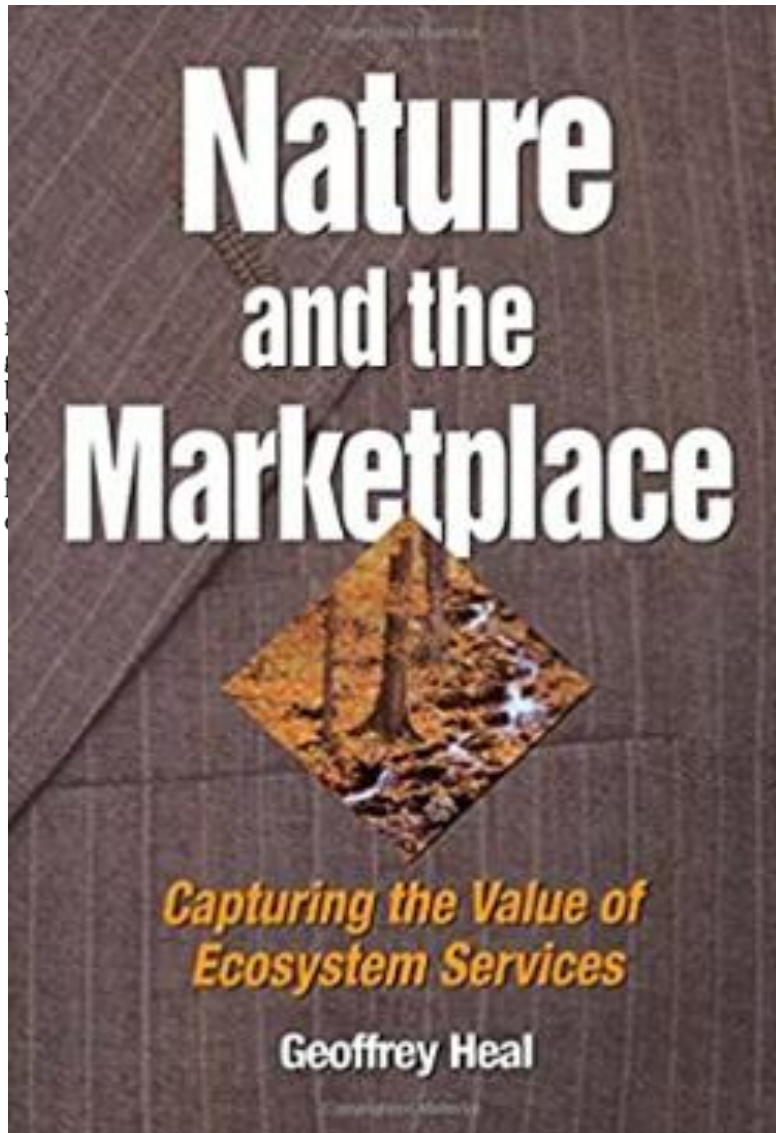
ELD
THE ECONOMICS OF
LAND DEGRADATION

Global Assessment Report on Biodiversity and Ecosystem Services



ipbes

The Origins of the Concept of Natural Capital

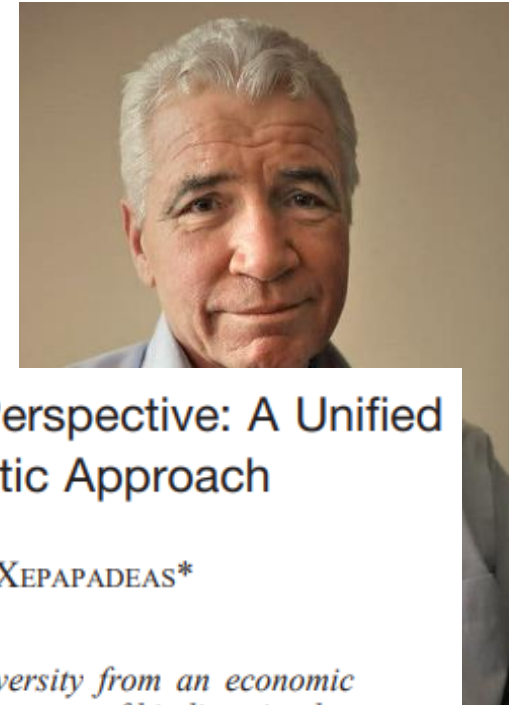


Econometrica, Vol. 70, No. 3 (May, 2002), 1155–1198

A THEORY OF DIVERSITY

BY KLAUS NEHRING AND CLEMENS PUPPE¹

How can diversity be measured? What does it mean to value biodiversity? Can we assist Noah in constructing his preferences? To address these questions, we propose a multi-attribute approach under which the diversity of a set of species is the sum of the values of all attributes possessed by some species in the set. We develop the basic intuitions and requirements for a theory of diversity and show that the multi-attribute approach satisfies them in a flexible yet tractable manner.



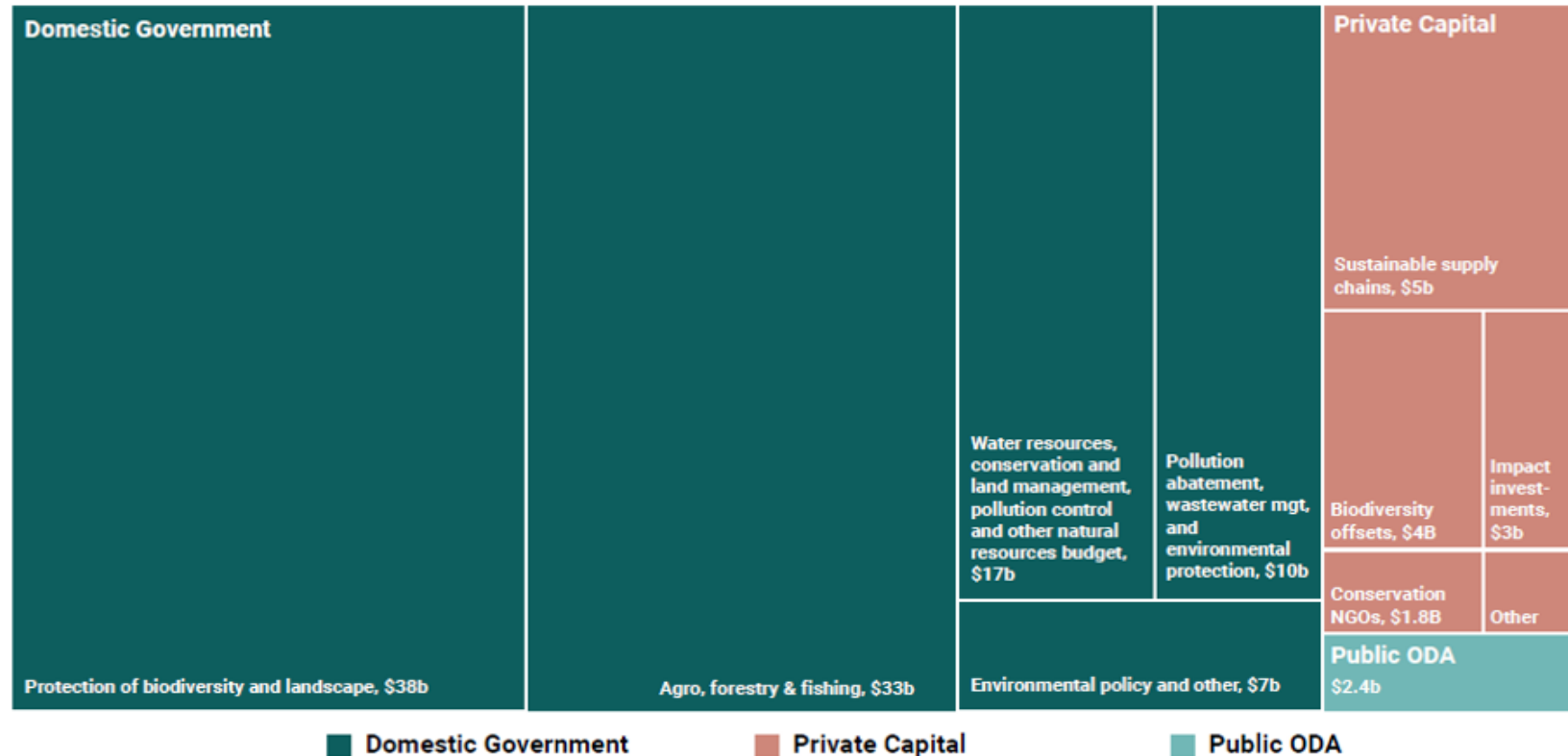
Valuing Biodiversity from an Economic Perspective: A Unified Economic, Ecological, and Genetic Approach

By WILLIAM A. BROCK AND ANASTASIOS XEPAPADEAS*

We develop a conceptual framework for valuing biodiversity from an economic perspective. We argue for a dynamic economic welfare measure of biodiversity that complements the literature on benefit-cost approaches and genetic distance/phylogenetic tree approaches. Using a unified model of optimal economic management of an ecosystem under ecological and genetic constraints, we identify gains from management policies leading to a more diverse system, using the Bellman state valuation function of the problem. We show that a more diverse system could attain a higher value although the genetic distance of the species in the more diverse system could be almost zero. (JEL Q2)

Estimating Biodiversity Financing Gap

Current Nature Based Public and Private Sector Funding



Source: UN's Environment Programme (UNEP), WEF, and the Economics of Land Degradation, entitled *The State of Finance for Nature in the G20: Leading by Example to Close the Investment Gap* (2022). ODA denotes Official Development Assistance.

So what then is “biodiversity finance”?



ORIGINAL ARTICLE

Biodiversity finance: A call for research into financing nature

G. Andrew Karolyi  John Tobin-de la Puente

First published: 13 February 2023 | <https://doi.org/10.1111/fima.12417> |

[Read the full text >](#)



PDF



TOOLS



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Abstract

Biodiversity conservation will supersede climate change risk mitigation and adaptation as the next grand challenge for sustainable finance. Closing the financing gap between what is currently spent and what is needed to be spent over the next 10 years to mobilize private investment to maintain ecosystem integrity and biodiversity, and the services they provide, is estimated to exceed hundreds of billions per year. Yet there are no studies in the top tier journals in finance that have framed the risks related to biodiversity loss, how those risks might be priced, or how the private financing flows need to be intermediated. We lay out one framework and outline important open research questions for financial economists to pursue.

Mobilizing Private Capital to Close Gap

Maryland Enacts First Conservation Finance Focused on Private Finance

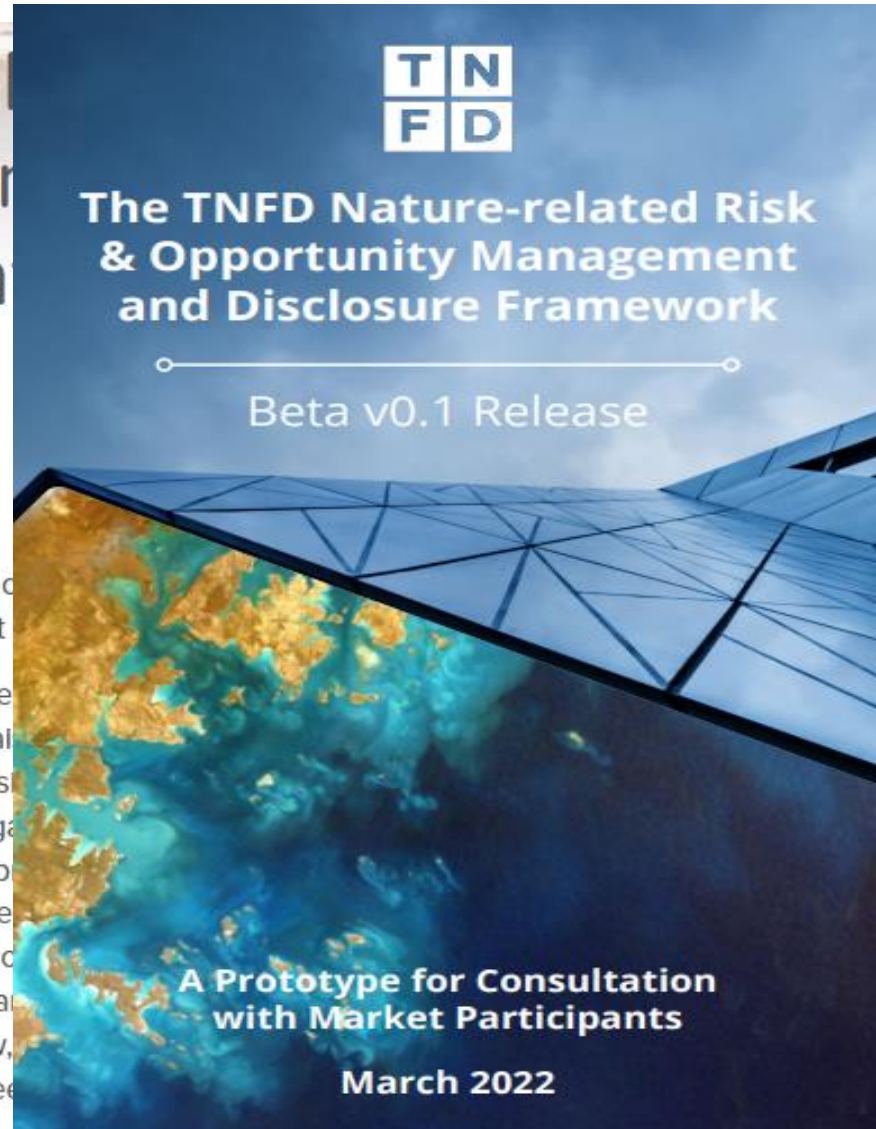
April 21st, 2022

Annapolis, MD – Today, Governor Lawrence J. Hogan signed SB0348/HB0653: The Conservation Finance Act



Photo by Office of Maryland Governor

The practical business organizations implementing the law, green



Environment Bill finally passes into law

As first introduced, the UK Government's Environment Bill has green groups calling the moment a "milestone" but some provisions.

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Kunming/Montreal's COP15



COP15: Nations reach 'historic' deal to protect nature

Why Is Wall Street So Hot for Biodiversity Right Now?

Finance is taking sudden interest in halting and reversing nature loss, moving to bring data and disclosures developed for climate into a murkier area.

Belize's \$364m Blue Bond Issuance in 2021



Nature And People Positive Solutions: The Nature Conservancy In Belize

Forbes



EDITOR'S CHOICE AWARD

The Nature Conservancy

The Editor's Choice Award exists to enable IFLR to recognise outstanding initiatives or projects that do not fall into our predefined categories. In recognition of its extraordinary effort on Belize's blue bond, this year's winner is The Nature Conservancy. The Conservancy's tireless work was vital in closing one of 2021's most impactful transactions. Deal parties described The Nature Conservancy team as the engine of the deal. They were consistently impressed with the team's ability to manage both the legal and business challenges of the bond, as well as to bring together a huge number of different stakeholders.

Blue Bonds, Rhino Bonds, Carbon Offsets...Oh My!

World Bank Issues **Klabin launches its first Sustainability-Linked Bonds**

The World Bank sells its first sustainability-linked bonds to support conservation efforts and sustainable development



by **David Coti** — April 5, 2022



Klabin is the world's first company to incorporate biodiversity targets in this type of bond issue

Klabin, Brazil's largest producer and exporter of paper for packaging and paper packaging, issued this week its first Sustainability-Linked Bonds Report. SLBs are securities linked to sustainability performance targets, with Klabin's issue incorporating sustainability targets to be reached 2030, with performance measured against the base year of 2025.

AA



Two of this century's greatest challenges. In order to meet this target will require serious action of every

THANK YOU



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