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OPEN LETTER

Open letter: The need for a site-based biodiversity standard measuring and certifying impacts from nature-based projects

OPEN LETTER TO POLICYMAKERS, BUSINESSES, INVESTORS AND PHILANTHROPISTS FINANCING RESTORATION PROJECTS

The Kunming-Montreal Global Biodiversity Framework (KM-GBF) sets out targets to halt and reverse biodiversity loss, including the ambitious aim to ensure that at least 30% of degraded ecosystems are under effective restoration by 2030. Despite ambitious pledges under the KM-GBF and other multilateral initiatives such as the Bonn Challenge, AFR100 and the Great Green Wall, large-scale restoration continues to be dominated by tree-planting schemes with widespread conflation of reforestation with restoration (Parr et al., 2024). Numerous projects have been poorly designed or have pursued other priorities, leading to unintended harm to native biodiversity from the use of monocultures, non-native and sometimes invasive species (Bond et al., 2019; Holl & Brancalion, 2020; Lewis et al., 2019). This is occurring at a time when 38% of the world's tree species are threatened with extinction (IUCN, 2024). Globally, there is a need to move biodiversity from an afterthought to a key outcome in restoration and other nature-based solutions (Brancalion et al., 2025; Seddon et al., 2021).

Whilst the scale of ambition on ecosystem restoration has grown in recent years, accountability has not kept pace. Many large-scale initiatives have limited monitoring of biodiversity outcomes, creating major uncertainty about their effectiveness in recovering biodiversity and, worse still, their potential to cause collateral damage to biodiversity. Monitoring and reporting have focused heavily on planning or implementation metrics, such as hectares pledged, numbers of trees planted or tree survival rates (Gatica-Saavedra et al., 2017; Key et al., 2022). In fact, 90% of the world's largest corporations involved in restoration fail to report a single ecological outcome (Lamont et al., 2023). This lack of data and transparency leaves policymakers, businesses and investors unable to assess their impact on biodiversity, at risk of causing unintended harm and undermining the confidence that nature-based investments can generate real value. With new frameworks such as the Taskforce on Nature-related Financial Disclosures (TNFD) and the Science Based Targets for Nature (SBTN) driving greater scrutiny of corporate and financial impacts on nature, and with billions of dollars already flowing into carbon credit schemes, the absence of credible biodiversity verification represents both a material risk and a missed opportunity (Nedopil, 2023). Only through credible, site-based monitoring and independent verification of restoration outcomes can financiers avoid greenwashing, rebuild trust and provide assurance that investments are delivering measurable gains for biodiversity.

Conservation and restoration practitioners, policymakers, funders, businesses, NGOs and researchers have already acknowledged the need for stronger safeguards and increased biodiversity outcomes from restoration. The Kew Declaration on reforestation for biodiversity, carbon capture and livelihoods (The Declaration Drafting Committee, 2022) was signed by over 3000 individuals and organisations from 113 countries and explicitly called for biodiversity to be placed at the centre of reforestation pledges. Meanwhile, the UNEA Resolution on Nature-based Solutions formally recognised in 2022 the necessity of biodiversity recovery in Nature-based Solutions. A set of international frameworks exists that outline best practices, including the Society for Ecological Restoration's *International Principles and Standards for the Practice of Ecological Restoration* (Gann et al., 2019), the *UN Decade on Ecosystem Restoration Standards of Practice* (Nelson et al., 2024) and, specifically for forests, the *Ten Golden Rules for Reforestation* (Di Sacco et al., 2021). Together, these best practice frameworks establish a strong foundation to deliver biodiversity outcomes, but until recently, a critical gap remained in translating these principles into credible, site-based verification of biodiversity outcomes.

The Global Biodiversity Standard is a site-based certification scheme whose methodology builds directly on these established frameworks (Bartholomew et al., 2024). Its eight criteria are derived from the *Ten Golden Rules for Reforestation* (Di Sacco et al., 2021), ensuring that projects protect and enhance ecosystem integrity including biodiversity, social benefits and use of adaptive management. Changes in ecosystem integrity are assessed using the Society for Ecological Restoration (SER) Five-star System (Gann et al., 2019), applying the key concepts of project baselines and natural ecosystem reference models to measure progress over time. In addition, it builds on the *UN Decade on Ecosystem Restoration Standards of Practice*

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(Nelson et al., 2024) to assess monitoring, evaluation, and adaptive management practices.

The Global Biodiversity Standard is a not-for-profit initiative, supported by a coalition of independent ecosystem restoration organisations and experts, founded and overseen by Botanic Gardens Conservation International, SER, CIFOR-ICRAF and other partners. It uses a decentralised model in which experts from biodiversity organisations such as botanical gardens are trained in The Global Biodiversity Standard methodology and deployed in their own regions. By combining the Global Biodiversity Standard's methodology with the knowledge of local biodiversity experts and Certified Ecological Restoration Practitioners (SER, 2025), The Global Biodiversity Standard ensures that site-based verification is both scientifically rigorous and grounded in local ecological and cultural knowledge.

We call on policymakers, businesses, investors and philanthropists financing restoration projects to the following:

- **Require independent certification of biodiversity outcomes** as a condition for financing, ensuring investments deliver genuine ecological and social value.
- **Support and mobilise local expertise**—including certified ecological restoration practitioners, botanical specialists and Indigenous peoples and local communities—to ensure that restoration is both scientifically rigorous and socially just.
- **Shift the definition of success from process to outcomes**, moving beyond hectares pledged or trees planted to measurable gains in ecosystem integrity, species recovery and biodiversity protection.
- **Consider adopting The Global Biodiversity Standard** as the benchmark for credible, site-based verification of ecosystem restoration and nature-based solutions, including projects financed through carbon markets.

AUTHOR CONTRIBUTIONS

David C. Bartholomew led the initiative and wrote the first draft. Paul P. Smith, George D. Gann, Marcello De Vitis and Amarizni Mosyaftiani reviewed and edited a second version; all 258 authors have read and agreed to the final content of the letter.

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DATA AVAILABILITY STATEMENT

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