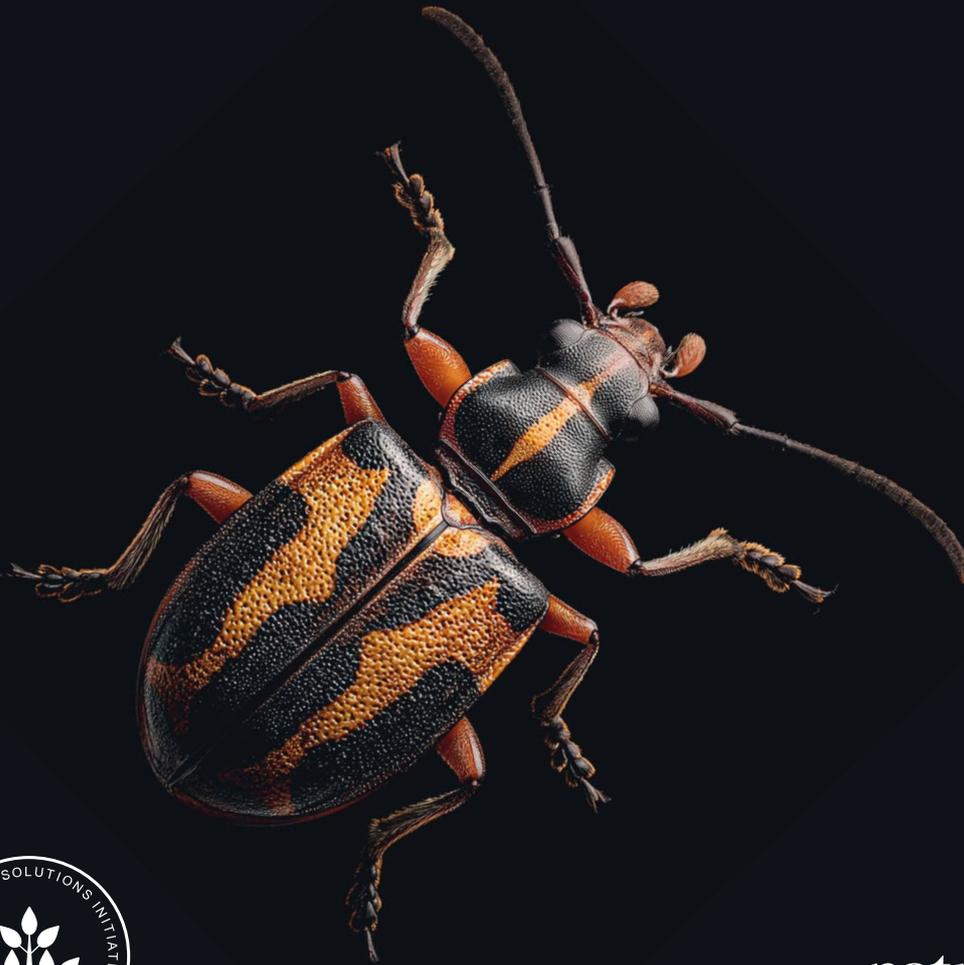


POLICY BRIEF

From Risk to Resilience: How Scaling Nature-Based Solutions Across Production Landscapes Can Future-Proof Business

Authors: Cécile Girardin, Nathalie Seddon, David Croft

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nature-based
insights 

In Brief

Climate instability and biodiversity loss are already disrupting global supply chains, exposing companies to rising material, financial, and reputational risks. With half of global GDP dependent on healthy ecosystems, protecting and restoring nature and landscapes which support those value chains is now a core business imperative, not a philanthropic add-on. Carefully implemented, high integrity landscape-scale nature-based solutions (NbS) can stabilise production, reduce climate shocks, and build long-term resilience, while helping companies meet tightening climate, biodiversity, and pollution regulations. The opportunity is clear: businesses that invest early in high integrity NbS will secure supply, reduce risk, build co-benefits for carbon and economic value, and capture growing market and investor demand for credible nature-positive action.

Key Takeaways for Business Leaders

- ❖ **Nature loss is a material financial risk—Now.**

Extreme weather, water stress, degraded ecosystems and failing harvests already destabilise commodities from cacao to rice. *Ignoring nature risk threatens supply and manufacturing security and future profitability.*

- ❖ **Landscape-scale NbS strengthen resilience and productivity.**

Diversified, biodiverse landscapes buffer climate shocks, reduce water and disease risks, and build resilience in supply networks to support long-term yields, outperforming simplified production systems.

- ❖ **Regulation is tightening —prepare or fall behind.**

Compliance on nature-related financial disclosures (e.g. CSRD), avoiding deforestation (e.g. EUDR), water management, driven by a dynamic voluntary ecosystem (e.g. 500+ adopters of TNFD), mean companies are increasingly and soon will have to disclose, reduce and manage risks associated with climate change and increasing pressures on nature. NbS help meet climate, water, and nature compliance.

- ❖ **NbS deliver multiple returns —operational, financial, and reputational.**

They cut risk, increase resilience within supply chains, reduce regulatory exposure, contribute to net zero targets, and increase appeal to investors and nature-conscious consumers.

- ❖ **Action beats perfection: start now with high-integrity principles.**

Apply the mitigation hierarchy, Oxford and IUCN NbS principles, Nature Positive frameworks, and co-design with Indigenous Peoples and/or local communities. Move from modelling to implementation, backed by a clear, tiered

1. The Challenge: climate- and nature-related risks are material business risks

Businesses worldwide face escalating disruption from climate change and nature loss. Extreme weather, ecosystem degradation, and geopolitical instability are already destabilising global supply chains (WEF Risk Report, 2025): cacao harvest failures have driven unprecedented price spikes in West Africa; banana production in South America is increasingly affected by extreme rainfall and disease; saltwater intrusion threatens rice production across Asia.

Ecosystem decline undermines economic stability.

An estimated 50% of global GDP depends on healthy ecosystems and the services they provide (Dasgupta, 2021). Nature degradation translates into concrete and escalating costs: it is already driving food price volatility through the decline of pollination services, soil health, water and weather regulation critical to agricultural productivity (Cardinale et al., 2012); water scarcity is increasingly associated with reduced GDP growth, lower investment, and inflationary pressure - failing to address water stress could shrink GDP by 7–15% in the most vulnerable regions by 2050 (Frost et al., 2025); and environmental degradation contributes substantially to the global burden of disease, with biodiversity loss increasing the risk of zoonotic spillover, limiting access to nature-derived medicines, and undermining core ecosystem functions critical to human health — clean air, water, nutritious food (Willett et al., 2023; Whitmee et al., 2015).

Regulatory pressure is intensifying.

As the scientific evidence base grows (IPBES, 2026), governments are translating global commitments into binding obligations on the private sector. Together, the Paris Agreement and the Kunming-Montreal Global Biodiversity Framework signal a convergence of climate and nature governance (Seddon & Wagner, 2024). Voluntary frameworks are rapidly translating into compliance requirements: the Task Force on Climate-related Financial Disclosures (TCFD) was established to help companies identify and disclose climate-related financial risks. In 2023, its recommendations were fully incorporated into the ISSB's IFRS S2 standard, forming the foundation for mandatory reporting, including the EU's Corporate Sustainability Reporting Directive (CSRD). It's nature-related equivalent, the Taskforce on Nature-related Financial Disclosures (TNFD), now with over 730 adopters globally, is following a similar

trajectory, with an ISSD exposure draft expected in October 2026. Nature-related financial risk — particularly corporate exposure to the degradation of ecosystem services across supply networks — is thus rapidly moving from voluntary best practice into the mainstream of global financial regulation.

The evidence is clear: *businesses that fail to understand nature risks and mitigate those through appropriate investment in place-based nature resilience and recovery strategies are increasingly exposed to operational reputational and regulatory risks with associated economic impacts.*

2. IPBES Business and Biodiversity assessment

The 2026 IPBES Business and Biodiversity Assessment — the result of three years of work by 79 experts from 35 countries, synthesising over 5,000 references — provides the first comprehensive, multilaterally approved evidence base on how businesses depend on and impact biodiversity and nature's contributions to people (IPBES, 2026). The assessment provides methods for the private sector to understand, identify, assess, disclose, and manage nature-related dependencies, impacts, risks, and opportunities (DIROs). Whereas data quality and methodologies to support this work are improving, yet better measurement, data, methodological guidance and incentives are still needed to implement meaningful actions that will deliver the K-M GBF goals. In particular, the assessment identifies that firms can act across four decision-making levels (corporate, operations, value chain and portfolio) to measure and address their impacts on biodiversity.

Widely recognised tools and datasets such as PREDICTS and GLOBIO make biodiversity risks quantifiable in terms of impact to biodiversity. While tools exist to assess organisational exposure to nature-related financial risks, robust methods for quantifying these risks across value chains — and their downstream consequences for local communities — remain underdeveloped.

Taking a step back, at the global level, these frameworks require multinational, multicommodity corporates to carry out a global materiality assessment. This can be supported by open access tools such as ENCORE and TRASE. Science Based Targets Network (SBTn) also provides the methodology to set specific, science-based targets for freshwater, land, and biodiversity at the corporate level.

However, most companies still lack nature targets, or struggle to translate targets into implementable action. Gaps in data, methods, tools, skill and knowledge remain a major barrier .In particular, knowledge gaps for measuring business impacts and dependencies can be identified across five broad areas “inadequate data; data accessibility and traceability; incomplete evidence; low adoption of methods; and limitation of methods” (IPBES,2026).

Here, we propose recommendations to businesses for monitoring, reporting and addressing DIROs.

3. Why landscape-scale nature-based solutions matter

Nature-based solutions (NbS) restore, protect, or sustainably manage ecosystems to deliver climate, nature and human wellbeing benefits (UNEA-5, 2022).

Fragmented sustainability projects with a focus on specific ecosystem services (e.g. carbon, water, pollination) are no longer sufficient. To meet ambitious 2030 targets, a landscape-scale NbS strategy is required. High-integrity NbS simultaneously deliver benefits for biodiversity, water, nutrient cycling, improved climate resilience (flood, drought, wildfire protection), stable and diversified agricultural production, improved water regulation and soil health, social equity, and economic resilience (Seddon et al, 2022; IUCN guidelines, 2022). By moving from isolated farm-level interventions to a comprehensive landscape approach—such as restoring a specific watershed or wildlife corridor—corporates will stack benefits across multiple ESG pillars simultaneously.

Scientific evidence shows that *complex, heterogeneous landscapes*—those with multiple habitat types, ecological corridors, and diversified land uses—consistently hold more biodiversity than simplified monocultures (Estrada-Carmona et al., 2022). High biodiversity confers ecological stability and healthy ecosystems (natural, semi-natural, agricultural). In turn, these ecosystems deliver a range of ecosystem services of great importance to producers, including water regulation, water quality, microclimate regulation, buffering climate shocks, nutrient cycling, soil quality, pest regulation, carbon storage (Cardinale et al., 2012; Isbell et al., 2011; Oliver et al., 2015), as well as income diversification and food security.

Box 1: The business case for NbS

Risk mitigation and supply security: High integrity NbS reduce physical and operational risks by restoring ecological functions that underpin stable production. They also reduce exposure to climate-driven supply shocks (WEF, 2020; WEF, 2024).

Compliance and reduced penalties: Investing in NbS supports compliance across tightening regulations on carbon, biodiversity and social impact—including scope 3 emissions, nature-positive commitments, and due-diligence requirements.

Reputation, brand and market advantage: Consumer demand for credible environmental leadership is measurable and growing. Products making substantiated ESG-related claims consistently outperformed equivalent products (Wiebe et al., 2023; McKinsey & NielsenIQ, 2023).

The picture for institutional investors is more complex. While ESG integration remains mainstream, institutional investors are yet to incorporate nature ratings into their decision-making. However, evidence suggests that investors have begun to require a risk premium in response to anticipated regulation and litigation risk associated with nature loss since the signing of K-M GBF and the launch of TNFD.

Long-term profitability and shareholder value: NbS provide durable returns by stabilising the resource base, reducing long-term liabilities and strengthening social licence to operate.

Corporate and financial institution's attention on nature is driven by regulatory exposure and material supply chain risk, rather than reputational preference. High integrity NbS, which respond to risk management and operational resilience rather than purely reputational risks, are increasingly well-positioned to attract investor interest as nature-related disclosure tightens.

For business, this means a more resilient supply chain, lower risk exposure, hence more reliable long-term value creation.

4. An action-oriented framework for businesses

A. Prioritise processes over perfect metrics

The IPBES Business and Biodiversity assessment (2026) provides the universally agreed evidence base available to businesses. Nature Positive Initiative and WBCSD are leading a consortium of organisations that aim to publish the Biodiversity Monitoring Protocol in 2026. Debates over biodiversity metrics should not delay investment in resilience. Action and learning can advance in parallel.

B. Apply core principles of high-integrity nature-based solutions strategies

Companies should align with established best practice:

- ❖ **Mitigation Hierarchy:** avoid, minimise, restore, offset.
- ❖ **Oxford NbS Principles (NbSI, 2021):** benefits to biodiversity, respecting rights, net zero-aligned.
- ❖ **IUCN Global Standard for NbS (2022):** effective, equitable, financially viable, culturally appropriate.
- ❖ **Nature Positive Framework (2024):** halt and reverse nature loss across operations and value chains.

C. Move from desk-based analysis to implementation on the ground

Models and disclosure frameworks identify hotspots for risk, dependencies, and opportunities. They provide the evidence-base needed for decision making. But only **local collaboration** with communities, governing bodies, experts, and project partners ensures durable success and reduces risks of project reversal.

Crucially, this requires a robust due diligence process for nature-based solutions that includes ensuring a full engagement and consent of indigenous peoples and local communities (IPLCs). NbS succeed only when rights, governance and benefit-sharing are central; IPLC leadership and stewardship is critical for legitimacy, longevity and ecological integrity.

D. Adopt a three-tiered monitoring framework

Tier 1 – Landscape-scale impacts

A desk-based analysis based on remote sensing, regional datasets, and models assesses the overall state of nature and ecological health. The most effective biodiversity metrics are not merely descriptive measures of ecological state, but actionable tools that identify the drivers of loss and inform clear, implementable interventions (Diaz et al., 2020; Milner Gulland, 2022). The goals underpinning the vision should be unambiguous, based on the best available knowledge, to make it possible to set specific, measurable, assignable, realistic, time-related (SMART) operational targets. This will inform decisions made by local project implementors and investors on which activities to prioritise.

Tier 2 – Corporate biodiversity footprints (box 2)

Quantify how company operations drive and are impacted by biodiversity loss, ideally by exploring their impacts on pressures on nature (e.g. land-use change, overhunting, eutrophication, climate change). Further, modelling the outcomes of NbS activities on a biodiversity footprint will inform setting achievable targets.

Tier 3 – On-the-ground outcomes

Invest in a reliable Monitoring and Evaluation strategy that will track the impact of nature-based solutions activities implemented on soil health, water quality, species diversity and ecosystem functioning.

[Nature based Insights](#) , a social venture spin-out of [Nature-based Solutions Initiative](#) has been trialling this approach in collaboration with corporates (including Reckitt) and NGOs (Earthworm Foundation, WWF) in five supply chains. In particular, the approach is presented as a TNFD pilot in **Surat Thani, Thailand**, linking corporate resilience with improved agronomy, agroforestry and biodiversity outcomes (TNFD LEAP guidance, 2023 [link]; GRI/TNFD case studies, 2025 [link]).

Latex Case Study References

- ❖ <https://tnfd.global/publication/additional-guidance-on-assessment-of-nature-related-issues-the-leap-approach/> - box on latex on p.121.
- ❖ <https://www.wbcSD.org/wp-content/uploads/2024/06/WBCSD-NbS-Blueprint-5June2024-.pdf> - NbS blueprint by WBCSD, see p. 51.
- ❖ <https://www.reckitt.com/media/pqkhvr0t/biodiversity-and-ecosystems-2022.pdf> - Reckitt insights. + sustainability reports from 2022 & 2023.
- ❖ <https://globalcanopy.org/events/assessing-nature-related-issues-in-agricultural-supply-chains-in-line-with-the-tnfds-leap-approach-webinar-featuring-tesco-reckitt-and-nature-based-insights/> - Global Canopy webinar on TNFD pilots.
- ❖ <https://tnfd.global/wp-content/uploads/2025/06/GRI-and-TNFD-Case-studies.pdf> - p.18.
- ❖ https://tnfd.global/wp-content/uploads/2023/11/TNFD-in-a-Box-Module-4_The-LEAP-Approach.pdf - p29.

Box 2: Biodiversity metrics for corporate footprint assessment

As pressure mounts on companies to quantify their nature-related dependencies, impacts, risks and opportunities (DIROs), a suite of aggregate biodiversity metrics has emerged to support landscape-level assessment. Four are particularly relevant for corporate use.

Biodiversity indicators

are biodiversity state or intactness indicators describing biodiversity condition, upon which composite indicators draw.

Mean Species Abundance (MSA)

measures the average abundance of native species relative to an undisturbed ecosystem. It is often produced through models like the GLOBIO model for biodiversity, and is widely used in biodiversity footprinting and impact metrics (such as in the Biodiversity Impact Metric). MSA and the related Potentially Disappeared Fraction (PDF) metric are the two most widely used indicators for quantifying losses in local biodiversity integrity associated with the production and consumption of natural raw materials. MSA also forms the scientific backbone of the Global Biodiversity Score (GBS), used by financial institutions for portfolio-level biodiversity footprinting (CDC Biodiversité, 2023; Alkemade et al., 2009).

Biodiversity Intactness Index (BII)

measures the average abundance of originally present species and their abundance, relative to a baseline. It is based on empirical biodiversity data and models of land-use impacts and data from the PREDICTS database. BII has gained traction in the financial community through integration with Bloomberg's data on nearly

50,000 global companies, enabling investors to view biodiversity risk across corporate physical assets worldwide (De Palma et al., 2024).

Biodiversity importance indicators

represent conservation importance rather than ecosystem condition

Range-Size Rarity (RSR)

is derived from species distribution dataset managed by the International Union for Conservation of Nature (IUCN), it gives higher RSR weight to species with smaller geographic ranges.

Composite biodiversity metrics

The Biodiversity Impact Metric (BIM)

is a practical risk-screening tool for supply chain businesses sourcing agricultural commodities, allowing companies to estimate the potential biodiversity impacts of different sourcing locations and commodities, and to identify high-risk contexts where action should be prioritised. The BIM integrates measures of area affected (via land use maps), biodiversity condition (via MSA, a measure of biodiversity loss), and importance of local biodiversity (via RSR, weights loss according to how rare species are). In the BIM metric, biodiversity in endemism hotspots counts more. It allows us to inform businesses on the pressures on biodiversity (as MSA is based on pressure-state relationships), threats, and responses in a single comparable score aggregable from site to regional scale (Tayleur et al., 2020; Di Fonzo & Cranston, 2017). This is the metric well suited to estimating a biodiversity footprint from a corporate sourcing a commodity from a landscape.

The **Ecosystem Integrity Index (EII)** is an ecosystem-level integrity metric designed to measure overall ecosystem health, not just biodiversity. It combines three pillars: functional, structural, and compositional integrity. Functional integrity measures ecosystem productivity and functioning. It is estimated by comparing actual Net Primary Productivity (NPP) with potential natural productivity. Structural integrity is a measure of landscape structure and connectivity, based on habitat fragmentation and human modification. Compositional integrity is a measure of biodiversity composition, using the Biodiversity Intactness Index (BII) as the core biodiversity indicator. These three scores range from 0 (degraded) to 1 (intact).

The **Species Threat Abatement and Restoration (STAR)** metric quantifies the contributions that abating threats and restoring habitats in specific places offer

towards reducing extinction risk, and is scalable across species, threats and geographies. STAR scores can be summed across sites and actors, meaning that contributions to global biodiversity goals can be directly compared and reported (Mair et al., 2021).

Each metric captures a distinct dimension of biodiversity change: BIM focuses on biodiversity loss and rarity weighting in supply chains; EII measures ecosystem health holistically; and STAR links actions to species extinction risk reduction. The IPBES Business and Biodiversity Assessment (2026) recommends using these metrics in combination to provide a complementary, actionable framework for companies to measure, disclose, and manage their biodiversity footprint at the landscape scale.

5. Conclusion: turning risk into opportunity

Faced with escalating climate instability and accelerating biodiversity loss, businesses can no longer treat nature degradation as an externality. Developing and scaling NbS across production landscapes:

- ❖ Strengthens supply chain resilience;
- ❖ Reduces regulatory and operational risk;
- ❖ Safeguards the ecosystems on which economic activity depends.

The imperative is clear: move from aspiration and high-level commitments to concrete, measurable action that regenerates nature, stabilises production systems and protects long-term prosperity. In doing so, the increased landscape resilience creates benefits for organisations dependent on these areas, communities within them, and contributes to national and global climate-nature targets.

Amid escalating climate instability and growing biodiversity threats, NbS can help businesses strengthen their operations while contributing to a more sustainable future. The key is moving beyond aspiration to concrete, measurable and targeted actions. By embracing comprehensive frameworks, collaborating with local partners and staying flexible in their choice of metrics, companies can transform risk into opportunity. In doing so, they not only align with emerging regulations but also safeguard the ecosystems that underpin our economy – and our collective well-being.

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