



Addressing Nature Loss in Asia: The Next Sustainability Challenge for Businesses

PREPARED BY EURASIA GROUP & SUNTORY

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Prepared by Eurasia Group & Suntory

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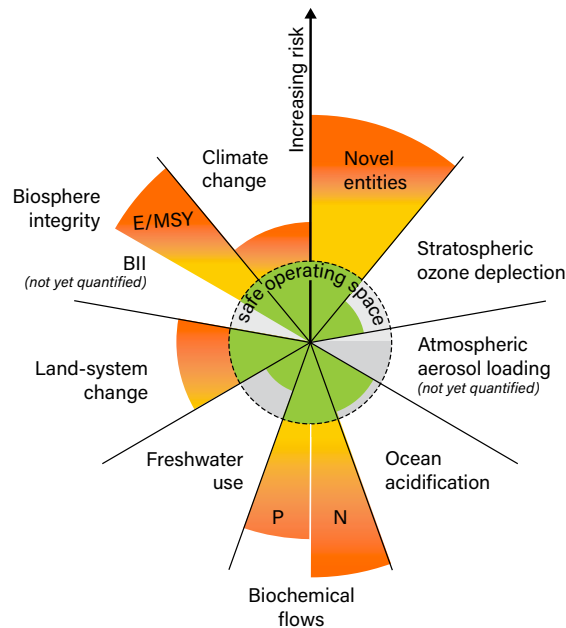
Executive summary

Biodiversity refers to the enormous variety and variability of life on Earth—in all its forms and at all levels, from genes to species. It is being lost at an unprecedented rate. Ecosystems are being destroyed at a scale never seen before, with scientists arguing that the sixth mass extinction may already be well underway. It is estimated that the world's biodiversity intactness is about 75% overall, significantly below the 90% threshold scientists believe is safe.

Human activity has already altered 75% of all ice-free land, while 85% of wetlands have vanished. In Southeast Asia alone, up to 42% of all species could be lost by the end of this century under a business-as-usual scenario. This destruction is of particular concern because biodiversity is critical for human livelihood as it supports food production, climate stabilization, and water purification. For instance, 1.6 billion people worldwide rely on forests to earn their living.

The concept of planetary boundaries can help the global community understand that the planet has a limit. Of the nine so-called boundaries, the two that are specific to biodiversity are among the most at risk and have already crossed their threshold, ushering in a new ecological era that poses existential threats to humans, species, and businesses (please see Figure 1).

Figure 1. Planetary boundaries show biodiversity limits have already been crossed



Source: Stockholm Resilience Centre

Reducing biodiversity loss to maintain a livable planet for future generations is crucial. In the globalized economy, however, people's dependencies on nature—which encompasses biodiversity but also geology, water, and all other inanimate components on Earth—are not adequately accounted for in the valuation of goods and services. Yet more than half of the world's total GDP—roughly \$44 trillion—is tied into sectors that are moderately or highly dependent on nature. This includes the five industries driving most of the biodiversity loss: agriculture, fishing, infrastructure, extractive industries, and forestry.

The stakes are even higher in the Asia-Pacific, where nearly two-thirds of the region's GDP is at risk from nature loss. For example, 65% of China's total economic output is threatened by potential nature loss; yet rapid growth and urbanization have taken their toll on the country's



natural ecosystems, with wetland areas declining by 9% in the past decade alone. Such continued erosion of nature and its services directly undermines prospects for long-term economic prosperity across Asia.

Perceptions and narratives pertaining to nature preservation are rapidly changing. Nature loss has historically been seen as a justice issue, putting vulnerable communities and future generations at risk. It is now increasingly viewed as an economic and financial issue, with direct and indirect impacts on business continuity, operating conditions, and perceived investor risk.

Recent dramatic events, including global forest fires and other environmental disasters, have fueled public interest in these matters (a so-called eco-wakening). Since the pandemic, growing evidence linking the spread of zoonotic diseases such as Covid-19 to ecological disturbance, land-use change, and global wildlife trade has further contributed to the eco-wakening. These recent developments helped spur local and national policy action on nature and are already affecting the ability of some businesses to maintain their social license to operate.

This awareness is also permeating the private sector. The 2021 World Economic Forum Global Risks Perception Survey recognized biodiversity loss as the third most severe risk this decade, only after climate action failure and extreme weather, placing it higher than risks such as erosion of social cohesion and infectious diseases.

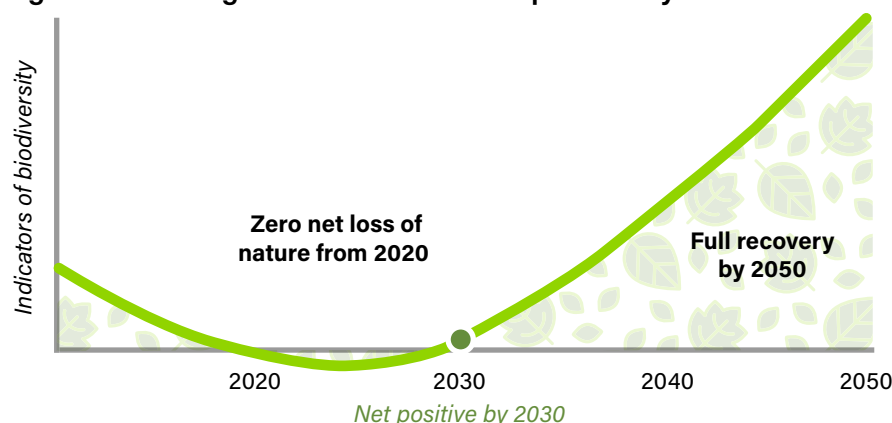
COP15, a gamechanger for nature?

Tackling nature loss will require a concerted effort from governments, investors, and industry to prioritize biodiversity through policies, investments, and large-scale projects. The UN biodiversity summit (COP15) held in Montreal last December aimed to get governments to agree on a global biodiversity framework (GBF) to provide a 2030 roadmap for all stakeholders. China hosted the conference—its first time heading a large environmental summit—even though it took place in Canada because of China's Covid-19 restrictions.

COP15 was, by far, the largest biodiversity summit in history, with 20,000 in-person participants—five times more than the previous summit in 2018—largely driven by delegates from the private sector.

After two weeks of tense negotiations, close to 200 countries agreed to halt biodiversity loss by 2030, making it the most significant global biodiversity agreement to date (please see Figure 2). Biodiversity is therefore set to become the second-most-important environmental priority for governments, after climate change.

Figure 2. Global goal for nature: Nature positive by 2030



Source: WBCSD



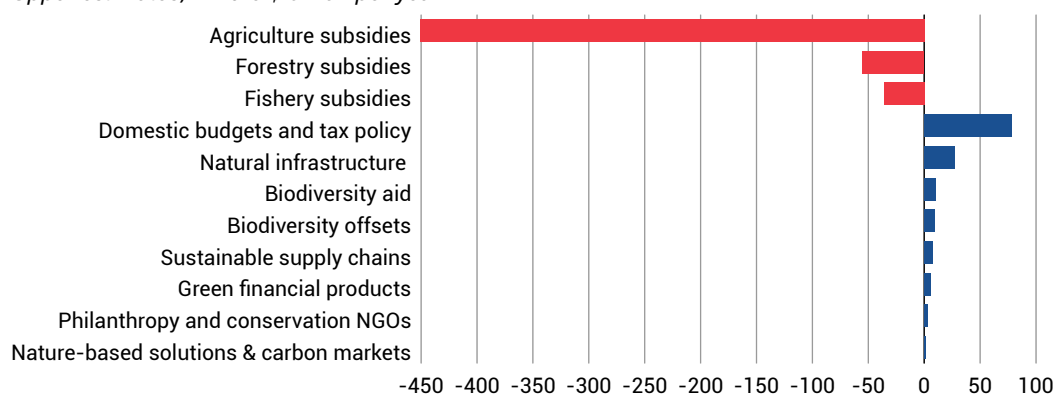
The GBF sets a clear pathway for governments, financial institutions, and corporations to protect 30% of land and sea by 2030 (30x30), marking the first time the world has a global conservation target of this magnitude. In this context, perceptions of the global approach to biodiversity will be split into “before COP15” and “after COP15.”

The 30x30 target will be the north star of biodiversity efforts. Other key quantifiable targets include the need to reduce harmful subsidies by \$500 billion per year (target 18), halve nutrient losses and pesticide risk (target 7), and cut food waste by half (target 16).

To make it happen, policymakers will rush to mainstream biodiversity “across all levels of government” (target 14). If phased out adequately, harmful subsidies could be redirected toward biodiversity-friendly activities across sectors (please see Figure 3). While the 23-target package is ambitious and might not be reached by 2030, it will create sustained momentum for the rest of the decade and provide a blueprint for the next one.

Figure 3. Harmful subsidies and global financial flows toward biodiversity

Upper estimates, in 2019 \$ billion per year



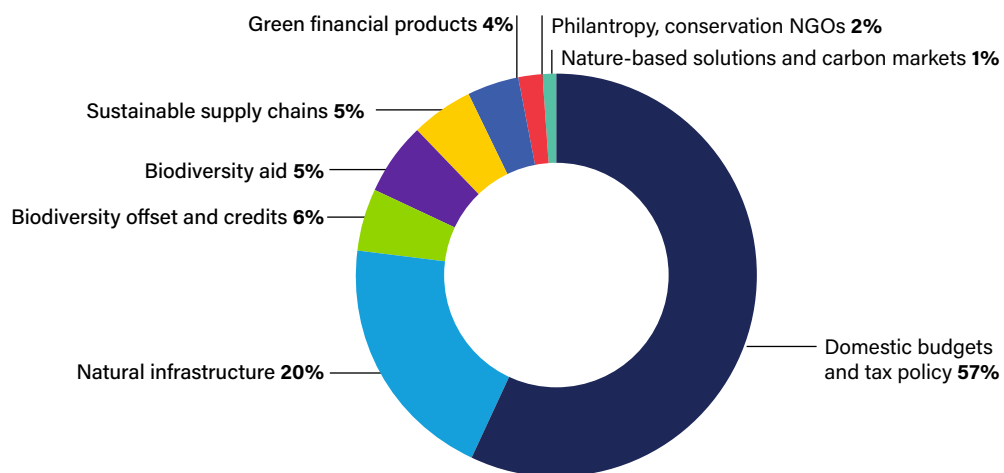
Note: The estimates of agricultural, forestry, and fisheries harmful subsidies correspond to OECD's "potential biodiversity harmful" category of subsidies. This graph excludes the additional \$395-478 billion in fossil fuel production subsidies.
Sources: OECD, The Nature Conservancy, Paulson Institute

Financing biodiversity

Transformational change and collective action from the public and private sectors will be needed to substantially scale up resources dedicated to biodiversity conservation and restoration. At present, public resources are leading biodiversity finance (83%), while private funding contributions are minor (17%), bringing the total combined figure to less than \$150 billion per year (please see Figure 4). To close the gap in nature investment, which will require an estimated \$700 billion per year by 2030, policymakers will leverage private finance (target 19 of the GBF). Given the scale of the needs, the end goal is to flip the current ratio of public-private funding.



Figure 4. Current biodiversity financing efforts are led by the public sector (%)



Sources: Paulson Institute, The Nature Conservancy, Cornell Atkinson Center for Sustainability

Biodiversity credits, which aim to finance conservation and restoration through tradeable biodiversity units, are poised to play a critical role to bridge the annual gap in nature investment. They were a trending topic at COP15, receiving widespread support from the UN, policymakers, investors, and corporations. This will likely result in an uptick in market standards and pilot projects, starting in Australia, Colombia, New Zealand, and South Africa.

Biodiversity credits, however, were not substantively addressed in the official COP15 negotiations. They are mentioned only once as part of a list of financing schemes in the final COP15 text, which means negotiators did not provide any guidance on the instrument. Given the urgent financing needs and the lack of policy guidance, the nascent market will likely expand much faster than regulations will be developed. This will probably make the deployment of these tools bumpy and tenuous. Companies and financial institutions interested in entering this space will need to conduct a thorough assessment and fully map out the potential benefits and drawbacks in terms of positive impacts on nature and reputational risks before moving forward.

Nature is a business issue

The private sector will be an important part of the solution to reduce impacts on nature and operate within safe planetary boundaries. On one hand, business practices directly threaten biodiversity, including through deforestation, species exploitation, and pollution of sensitive freshwater and marine habitats. On the other hand, the increased recognition of the link between business sustainability and a healthy, living planet is helping to create a business case for integrating biodiversity into corporate decision-making. There is growing consensus that the consequences of nature loss for the long-term sustainability of businesses will affect everyone along the supply chain; production costs will likely increase, profitability will likely drop, and prices will likely climb for end consumers.

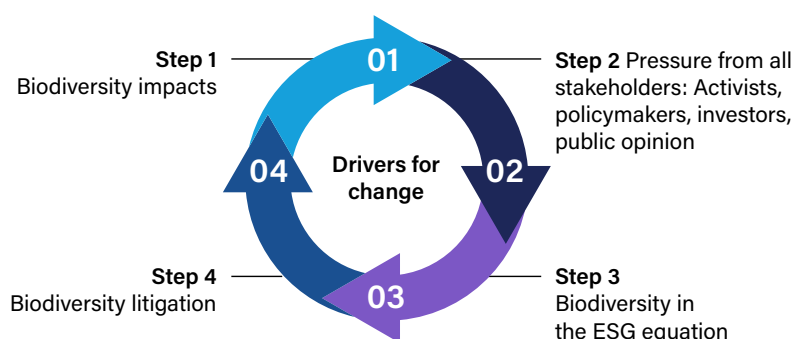
Forward-thinking businesses, therefore, have a short window of opportunity to get ahead of the competition by acting now to better understand and manage their biodiversity risks, pending compliance, but also identify and leverage opportunities along their value chains. Environmental awareness is particularly prevalent among Asian consumers, with 70% of people preferring to



buy products from companies that respect biodiversity and people. Early corporate leaders could win big, as some estimates suggest that nature-positive business opportunities in the Asia-Pacific region could generate \$4.3 trillion by 2030, equivalent to 14% of the region's GDP.

In addition, greater consumer awareness will exert more pressure on businesses to meaningfully contribute to addressing the nature crisis. Additional pressure will come from investors who will increasingly incorporate biodiversity into their environmental, social, and governance (ESG) decision-making, and from activists who will closely monitor the uptick in biodiversity regulations and identify opportunities for litigation cases, initially targeting large firms to maximize impact, media coverage, and the possibility of setting precedents (please see Figure 5).

Figure 5. Biodiversity action: Drivers for change



Chapter 1: Biodiversity and climate change are two sides of the same coin

Compared with climate change, biodiversity has historically been overlooked in the global debate on sustainability. Yet the conversation about biodiversity is rapidly developing and gaining attention from regulators and investors. Still, this fast-paced ramp-up is complicated. While there is a growing policy consensus on the pathway to stabilize climate change, the efforts required to limit nature loss are less clear, less discussed, and often more localized.

The nature and climate crises are deeply intertwined. It will not be possible to solve one without addressing the other. Climate change is quickly becoming one of the biggest risks to nature, currently accounting for an estimated 11%–16% of biodiversity loss—a figure that is expected to increase as shifts in temperatures and weather patterns continue to erode global life-support systems. At the same time, the loss and degradation of the world's natural carbon storage systems exacerbates the climate crisis by releasing vast amounts of carbon dioxide—deforestation fires in Indonesia, for instance, accounted for 7% of total global greenhouse gas emissions in 2019.

Biodiversity is a victim of climate change and a solution to fight it

Climate change accelerates biodiversity loss, while biodiversity offers clear solutions to tackle climate change. Climate change is disturbing freshwater, marine, and terrestrial ecosystems. Meanwhile, 1 million animal and plant species (out of 8 million total) are currently threatened with extinction, more than ever before in history. Global wildlife populations have plummeted nearly 70% since 1970. That said, nature-based solutions, such as green roofs to cool buildings, bee pollination to improve crop yield, or mangroves to store carbon, can help boost climate change mitigation and adaptation



efforts. Land and oceans, for instance, can absorb more than 50% of all carbon emissions. This shows that biodiversity and climate change should be tackled simultaneously. Failing to do so risks triggering unintended negative consequences for one issue or the other.

The two crises need to be addressed simultaneously

With the current focus on climate, there is a tendency for stakeholders to adopt a sequential mindset and plan to deal with the nature crisis later. This kind of siloed approach, however, can have serious consequences. While the proliferation of mass-scale single-species forestation projects can help offset carbon emissions, they can create ecological deserts in areas previously supported by highly diverse ecosystems. To avoid creating climate remedies that further drive biodiversity loss, nature-based solutions can be identified and deployed to tackle both the climate and nature crises.

Coastal mangrove forests, for example, are some of the most biodiverse ecosystems and they store vast amounts of carbon, filter water, and protect communities from storms and rising sea levels. But they are also some of the most threatened habitats on the planet. Studies indicate that, by protecting and restoring mangroves in the Asia-Pacific region, the well-being of millions of people who depend on them for food and security could be secured, and business opportunities worth an estimated \$23 billion could be created.

A sense of urgency in responding to the nature crisis is undermined by the fact that deterioration of nature often occurs out of sight and unfolds too incrementally to be noticed. Whereas climate-related extreme weather events such as floods, hurricanes, and wildfires are more palpable, biodiversity loss such as species overexploitation or forest degradation are often more localized, initially affecting only dependent people in very specific areas.

The risks of biodiversity loss are often less tangible to businesses at the end of global supply chains. Nonetheless, continued erosion of the planet's life-support systems will have global ramifications. The rapid loss and degradation of the world's coastal wetlands, as one example, is leading to a reduction in local food security and increased vulnerability to extreme weather events. Environmental disasters such as hurricanes and floods in coastal areas of the Asia-Pacific were exacerbated by the loss of these systems, causing an estimated \$56.8 billion in economic damage in 2018 alone.

Chapter 2: The business-nature nexus

The widening recognition of the role of nature in sustaining economies is slowly leading to a shift in how businesses interact with natural capital—the global stock of natural resources. This can be partly attributed to enhanced consumer awareness and expectations. Eco-conscious consumers appear to be particularly prevalent in areas of high biodiversity significance and economic reliance on nature, with Asian consumer awareness consistently ranking higher than that of the UK, the US, or Germany.

As the nature crisis progressively becomes part of the public discourse, nature-related considerations are expected to be mainstreamed more and more into business decision-making and used to create opportunities and demonstrate value. Corporate goals will grow in scale and ambition this decade, with an increasing number of businesses already signing up to broader commitments such as zero-deforestation supply chains, calls to make biodiversity disclosures mandatory, and corporate “nature-positive” targets. While there is not a commonly agreed definition of nature positive, it is understood that the concept implies clear, measurable, and substantial efforts to generate positive outcomes for nature (please see Chapter 4 for more detail on this issue).



Companies are starting to talk more openly about how they are responding to the nature challenge. More than half of the global Fortune 500 companies now acknowledge biodiversity loss publicly, including through annual reports. There is still a long way to go for target setting, though, as only 5% of these firms have established measurable targets.

From risks to opportunities

The private sector target of the GBF—the first of its kind to be adopted at a COP—puts the onus on governments to enable companies and financial institutions to disclose their biodiversity risks, impacts, and dependencies across value chains and portfolios (target 15). While the final text dropped the word “mandatory,” the target will be the most tangible outcome of COP15 with direct as well as short- and medium-term implications for the disclosure burden, capacity building, and existing corporate targets of most large firms.

A spike in voluntary and mandatory disclosures is expected after the release of the Taskforce on Nature-related Financial Disclosures (TNFD) framework in late 2023. The TNFD is a business-led initiative that is designing a risk management and disclosure framework for companies and financial institutions, following the model of the widely accepted Taskforce on Climate-related Financial Disclosures. The TNFD will help organizations disclose their biodiversity impacts and dependencies. In Asia, Japan is showing interest and will likely lead the way, starting with voluntary disclosures.

Harming nature also translates into tangible and pervasive risks for businesses and investors (please see Figure 6). These may include physical risks linked to a company’s dependencies on nature, such as forest products and fresh water, which could result in disrupted supply chains and input scarcity. These may likewise involve transition risks, which arise when a company does not adapt to a rapidly changing societal landscape because of nature-related concerns, leading to project delays, withholding of loans, damage to brand and reputation, and stranded assets. Lastly, when human impacts degrade ecosystems beyond certain tipping points, irreversible shifts in those ecosystems can produce systemic risks with devastating societal and economic costs. The drying of the Amazon rainforest, for example, will wreak havoc on global weather patterns if left unchecked, affecting businesses worldwide.

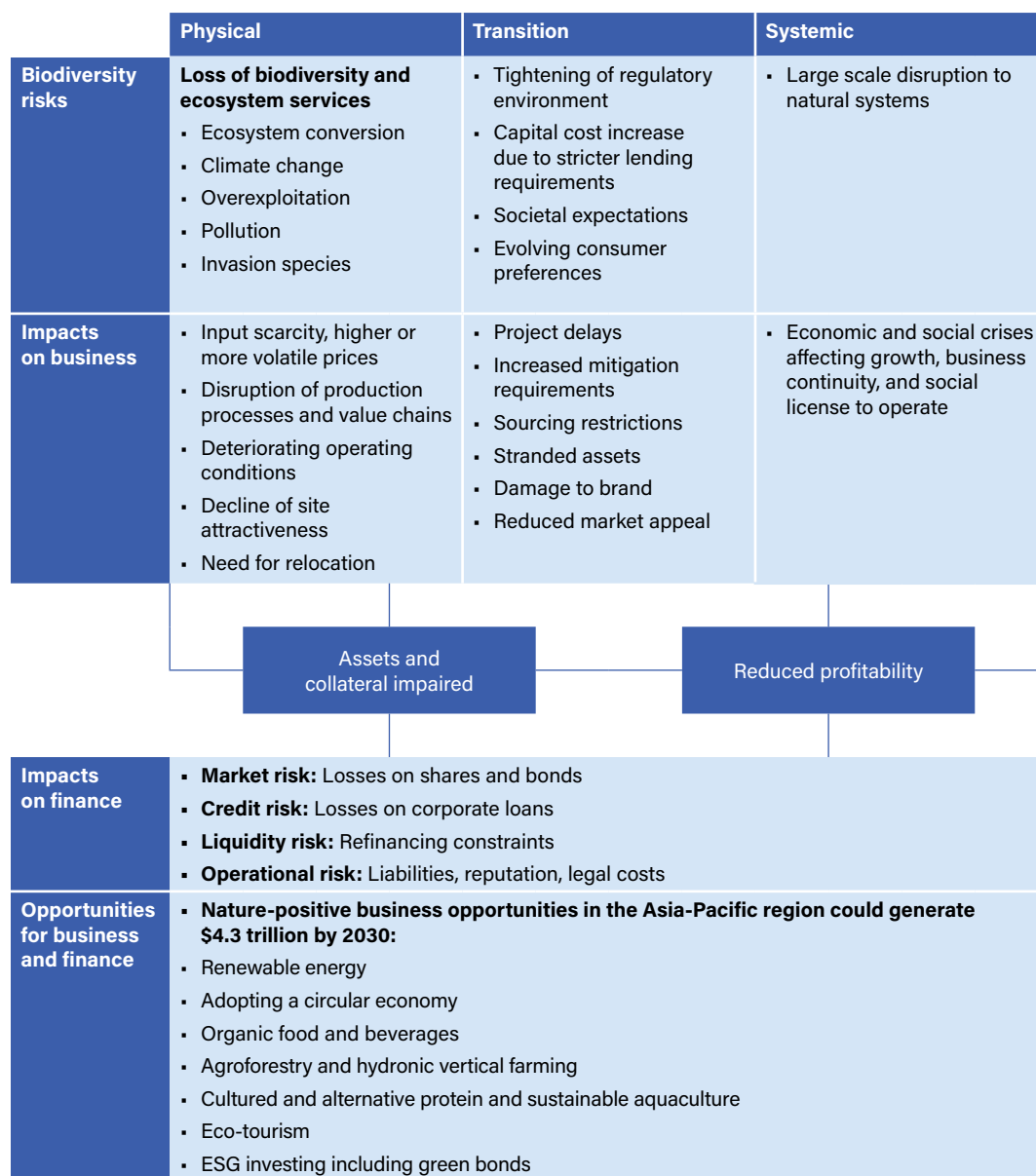
But where there are risks, there are opportunities. Companies that have adequately considered their responsibilities to nature have seen risks transformed into competitive gains through better engagement with civil society, governments, and financial institutions, resulting in enhanced reputational standing. Specifically, nature-friendly products are likely to attract positive consumer attention—when not tied to greenwashing—while investments in nature such as green and sustainability-linked bonds are garnering growing interest from investors.

The value of nature-conscious business opportunities in the Asia-Pacific region alone is estimated to be \$1.6 trillion. These include adopting a circular economy, producing organic food and beverages, developing sustainable aquaculture, and promoting an industry focused on consumer waste reduction.

Forward-thinking companies can go a step further and foster innovative solutions to harness nature’s services. Nature-based solutions, such as protecting and restoring coastal forests, can provide clean water, improve climate resilience, and protect vulnerable infrastructure from severe weather events. New technologies, such as deriving lithium from seawater, can also diminish the need for extracting new minerals from the ground to produce batteries, actively helping to provide clean and renewable energy sources.



Figure 6. Biodiversity: Risk implications for the private sector



Source: The Biodiversity Consultancy

Understanding nature-related dependencies

Nature is a critical supply chain partner, yet it remains consistently undervalued in corporate and investment decision-making. A recent report estimated that 63% of the Asia-Pacific's GDP, or \$19.5 trillion, is potentially at risk from nature loss—a higher share than the global average, owing to the significant economic contributions of sectors that are highly dependent on nature, including food and agriculture.

While much of the media attention, activism, and policy debates have focused on the negative *effects* of businesses on nature, expanding the conversation to their *dependencies*—the aspects of



ecosystem goods and services that a company relies on to function—will be critical (please see Box 1). Helping companies understand their dependencies is a prerequisite to assessing risk as well as securing much deeper buy-in and adoption of the nature agenda by private actors.

This transformation is likely to be driven by financial institutions, which will increasingly place more stringent requirements related to nature performance on their investments. This will then exert pressure on companies to account for their dependencies on nature. At present, few companies have the capacity and internal know-how to articulate their nature dependencies and understand the associated material risks.

Failure to accurately account for dependencies and the accompanying risks can result in disruptions to supply chains and lead to input scarcity across various supply chains. Furthermore, with increasingly intricate and multisectoral supply chains, upstream risks can come to haunt industry later. For example, damage caused by marine debris from the industrial fisheries sector will cost tourism and other industries across the Asia-Pacific region more than \$200 billion per year by 2050 if left unchecked. In China, a severe drought in August caused parts of the Yangtze River to dry up, suspending hydropower production and halting shipping with major ramifications for industry.

Although there is rising awareness of nature-related supply chain dependencies, there is uncertainty about appropriate responses and initiatives to tackle this issue. A first step is for businesses to conduct biodiversity screenings to develop a good understanding of where and how they interact with—and affect—nature. This requires taking time to identify dependencies at the direct operation level, and then repeating the exercise incrementally across the value chain.

These screenings will allow firms to identify gaps in their understanding of dependencies, each of which will then require a mitigation strategy to be filled. This could take the form of a partnership with authoritative biodiversity organizations such as the International Union for the Conservation of Nature (IUCN) or policy engagements to advocate for legislation that would help fill a specific gap. Other steps could include industrywide cooperation to identify best practices at the sectoral level, or cross-industry dialogues to learn from upstream and downstream actors, who will be able to shed light on their own direct dependencies and how they affect other actors along the value chain (please see the final section of this report for more on Getting ahead on nature).

Box 1: Business dependencies on nature in Asia

Asian businesses are highly dependent on the goods and services provided by nature—perhaps more so than their counterparts on any other continent—placing them at particular risk of disruption from nature loss. For example, agriculture, fishing, and forestry accounts for more than 90% of deforestation in the Asia-Pacific, including 2.2 million hectares of tropical forest loss annually

Both upstream sectors, such as resource extraction and agriculture, and downstream actors, such as manufacturing and retail, are vulnerable. The depletion of natural resources lessens the availability of minerals and metals critical to the energy transition, directly affecting the delivery of microchips needed to manufacture electric vehicles and renewable energy solutions.

Likewise, sectors critical to human well-being such as agriculture, food, and beverages are heavily dependent on the provision of freshwater. Water resources are under considerable pressure from unsustainable use of groundwater coupled with the destruction and contamination of freshwater ecosystems such as lakes and rivers. About 80%–90% of wastewater in Asia is discharged without treatment into freshwater ecosystems. Owing to its relatively high use and poor management



of water resources, Asia is the most water stressed continent on the planet—nearly all Asian megacities are facing serious water scarcity issues.

The ongoing and rapid decline of species will bring market uncertainty and carry substantial economic costs. The loss of pollinating insects has had severe impacts on agricultural output in China, for instance, which is heavily dependent on pollination by animals. This represents a loss of up to 15% of China's agricultural output, equivalent to \$1.8 trillion.

Table 1: Exposure to risks and opportunities for key sectors in Asia

	Key nature-related impacts	Nature-related risks to the sector	Nature-related opportunities for the sector
Agriculture, food and beverages	Land clearing, water, exploitation, contamination, and pollution	Depletion of water resources and quality, consumer awareness, damage to reputation and brand	Alternative packaging, organic food, agroforestry, plant-based substitutes, reducing food waste
Energy	Habitat loss, climate change, water pollution	Tightening regulation and lender requirements	Transition to green renewable energy
Retail and consumer goods	Plastic pollution and other waste, water use	Consumer awareness, damage to reputation and brand	Alternative packaging, waste management, recycling and reuse
Mining and metals	Areas open to logging and deforestation due to access roads for new mining projects	Tightening regulation and lender requirements, litigation	Landscape level restoration, sustainable mining, circular economy
Infrastructure	Habitat loss and fragmentation, invasive species	Calls for improved management, lender scrutiny	Energy efficiency, alternative building materials, green architecture
Forestry and paper	Deforestation, habitat degradation	Nature-dependencies and risks of loss of access	Sustainable forestry, recycling and reuse
Tourism	Waste, environmental degradation	Increasing tourist expectations; unsustainable use of tourism resources	Eco-friendly tourism

Sources: Eurasia Group, KPMG, IFC

Asian businesses playing catch-up

So far, Asian businesses have been slow to respond. A 2022 publication by environmental management consultants Nature Positive shows that most Asian companies make only passing reference to nature and are unsure about how to address it. Only 4% of firms highlight biodiversity as a priority. Part of this can be attributed to the challenge of understanding nature's dependencies—the opacity of supply chains causes businesses to struggle to find precise information about the sourcing of the materials they use and how they affect the environment. The study finds that less than half of the companies reviewed understand their dependencies and effects on nature.

Asian consumers, who are among the world's most environmentally aware, will be a key factor in driving shifts in business practices. Changes in consumer preferences toward products with reduced biodiversity impact can create both market risks and opportunities for companies. Most people in China (92%), Vietnam (93%), and South Korea (85%) think that companies have a moral obligation to generate a positive impact on biodiversity and people through their sourcing of natural ingredients. Businesses that understand their dependencies on nature could therefore focus action on the sustainable use of natural resources, such as freshwater and forest products, to build consumer trust.



Box 2: How are Asian companies addressing nature loss? Examples across the continent

ANJ: Nature-friendly palm oil (Indonesia)

- **What is it doing for nature?** PT Austindo Nusantara Jaya Tbk (ANJ) is an Indonesian agribusiness firm that aims to maintain or increase biodiversity on the lands it owns. It is developing metrics to quantify progress toward biodiversity targets.
- **How is it doing this?** ANJ has turned to its employees to help collect biodiversity data to support these metrics. In 2019, the company started encouraging staff to record and submit animal and plant sightings on ANJ-owned land. In November 2021, the data were made available on ANJ's online platform, PENDAKI. As of June 2022, 778 “citizen scientists” had submitted over 40,000 observations identifying 591 unique species. ANJ also employs trained conservation staff and independent third-party organizations to conduct biodiversity monitoring. An expert review found that the PENDAKI observations were 84% accurate.
- **What comes next?** In recognition of its biodiversity significance, ANJ has made the decision to conserve all its unplanted land holdings. The company is now looking into measuring the value of the biodiversity on its land, based on globally recognized standards for valuing natural capital.

Ayala Group: Payment for ecosystem services (Philippines)

- **What is it doing for nature?** Ayala Corporation's sustainability philosophy is rooted in a focus on ESG factors and in creating shared value for its stakeholders. By understanding its ESG impacts, Ayala ensures it remains a responsible organization while contributing to the development of the Philippines. The company found biodiversity to be a material issue for its businesses and plans to adopt the TNFD's recommendations once released in late 2023.
- **How is it doing this?** Ayala has embarked on a groupwide biodiversity conservation program to protect remaining high-value forests in Mindoro through Project Kasibulan. With a project area estimated to cover more than 32,000 hectares, it will be the first endeavor of its kind in the country.
- In recognition of the needs of communities that depend on forest resources, long-term sustainable interventions identified by the project include the implementation of a payment for ecosystem services (PES) model to prevent and reduce unsustainable use of natural resources in Mindoro.
- **What comes next?** Ayala is devising a roadmap for biodiversity action by building on existing initiatives across its different businesses. For example, Energy subsidiary ACEN already protects about 800 hectares of forest and shoreline. Ayala Land, its real estate subsidiary, protects 66 IUCN Red List species in El Nido and Anvaya.

National initiatives (Japan)

- **What are these doing for nature?** In 2021, Japan established a 30by30 Roadmap and launched the 30by30 Alliance for Biodiversity, which is spearheaded by Japan's Ministry of Environment (MoE) as an effort to conserve at least 30% of land and sea areas by 2030.
- **How does this work?** The 30by30 Alliance aims to effectively promote the measures embodied in the roadmap and was launched as a multistakeholder platform. The alliance comprises 17 proposers (organizers) from industries and governments, including Japan's MoE. As of December, more than 300 organizations from various sectors have joined the alliance.

Indorama Ventures PCL: Circular feedstocks (Thailand)

- **What is it doing for nature?** Indorama Ventures (IVL), a family-owned chemicals company listed in Thailand, is outspoken about the need to move toward “circular feedstock,” defined as renewable and recycled feedstock.



- **How is it doing this?** The company's biodiversity goals, which include avoiding deforestation in its operations and promoting the sustainable use of resources, support the overall goal of sustainable development in the management and development of IVL's business.
- **What comes next?** IVL's Vision 2030 plan will invest up to \$8 billion to increase biomass feedstock to 2.4 million tons and recycled feedstock to 3 million tons. Biomass, the nonedible byproduct from food production, can enable a 60% or more reduction in lifecycle emissions by turning waste into a feedstock.

TSMC: Habitat restoration (Taiwan)

- **What is it doing for nature?** Taiwan Semiconductor Manufacturing Co. (TSMC) is the world's leading producer of semiconductors. In 2021, TSMC added biodiversity to its list of potential material issues for the first time. While the analysis ultimately found that biodiversity was not a material issue for the business, that could change as stakeholders become more aware of the risks of biodiversity loss. Biodiversity was found to be correlated with other ESG issues that are important to stakeholders and/or have a significant effect on operations—water stewardship, circular resources, air pollution control, and social impact.
- **How is it doing this?** To address biodiversity risks, TSMC carried out ecological surveys over 2020-2021 that found its sites are home to 211 animal and 644 plant species. Initial habitat recovery programs at manufacturing sites have shown promise. For example, the number of fireflies at TSMC's Tainan facilities increased fivefold between 2019 and 2021, after it adjusted conditions such as water quality, plants, and lighting.
- **What comes next?** The Tainan program could serve as a model for other sites.

Chapter 3: Corporate accounting for nature

Meaningful action to tackle the nature crisis has historically been constrained by a lack of direction. While finding a carbon-equivalent metric for nature will be tricky, pointing the global community toward a common goal—and associated pathways to reach it—is essential. The COP15 agreement, which aims to halt biodiversity loss by 2030 through its package of 23 targets, will do that by guiding policy action for nature for the rest of the decade.

Given nature's complexity, a single all-encompassing measure to preserve it is unlikely to exist, and pursuing one could even be counterproductive. Instead, it will be essential to identify key representative components of nature that can be measured to assess progress.

Tools to assess nature impacts and dependencies

To align their activities with global processes and action, companies will need to measure and report on impacts across their value chains. This requires developing and agreeing upon methods and metrics to account for negative actions that drive biodiversity loss and factor in positive actions that contribute to the GBF developed at COP15. The proliferation of biodiversity tools, metrics, and data will increasingly allow companies to track and report on their nature performance. However, with more than 3,000 nature-related metrics available, it can be daunting for a business to embark on a nature-positive journey. The challenge for businesses is to determine which tools and metrics are appropriate for their specific portfolios and activities, supported by clear guidance and standardization to avoid divergent approaches.

There also needs to be agreement on what to measure and how. Recognizing that companies cannot report on everything, there is a push toward fewer tools and more harmonization. A big



challenge will be to identify and standardize a subset of metrics that can be used to measure and track progress. Scientific thinking is seemingly converging around measures of ecosystem extent and condition, extinction risk, and species abundance (please see Box 3 and Table 2). Together, these metrics aim to provide a snapshot of the state of the environment for any given area at any given time. They have the potential to allow all parties, including governments, industry, and the finance sector, to measure and report on their contributions within the GBF.

Box 3: Using STAR to assess species conservation and recovery

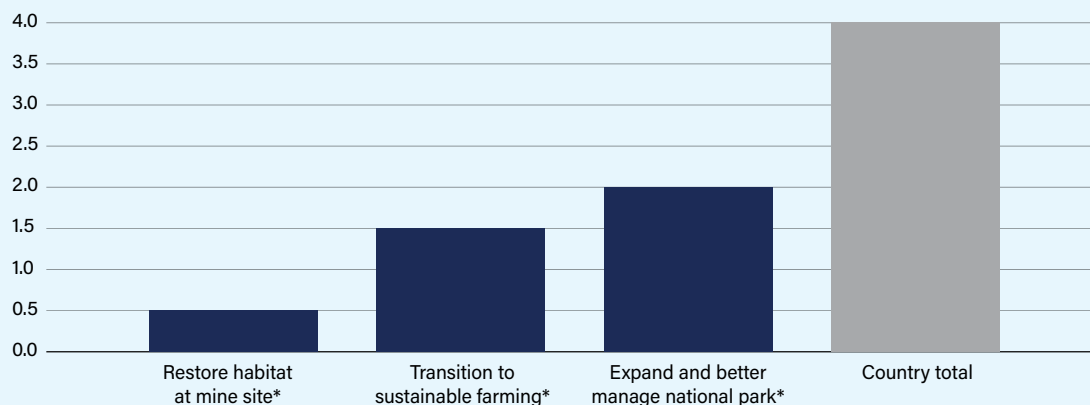
The IUCN's [Species Threat Abatement and Restoration metric](#) (STAR) is well placed to measure progress on biodiversity loss reduction through actions that curb species' extinction risk. STAR prioritizes species conservation action in places where this is most urgent. It applies data from the IUCN Red List on species diversity, range, and threat status to highlight and locate the main opportunities for interventions.

STAR is calculated in a standardized way, using global and spatially explicit data, allowing scores to be assessed, compared, and added for any site or company activity. The tool's scores can also be broken down to show the contributions of individual threat types or company activities, enabling the identification of opportunities and risks across assets and types.

STAR is accessible via the [Integrated Biodiversity Assessment Tool](#) (IBAT)—a “one-stop shop” data service for businesses seeking authoritative global biodiversity information.

Species threat abatement and restoration metric

Country example (%)



*Potential contribution to averting extinction risks for all species worldwide: 0.6%
Source: IUCN 2021

STAR quantifies the contribution of species conservation actions. It can be applied at any scale and used by governments and businesses to measure their contribution toward species goals (Source: [IUCN 2021](#)).

**Table 2: Tools and databases for assessing nature impacts and dependencies**

Resource	What is it?	Who is it for?
Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE)	Provides tools to visualize environmental dependencies and impacts	Helps financial institutions understand the economic implications of environmental change and how these might present a business risk
IBAT	A one-stop shop for global biodiversity datasets, including STAR	Provides businesses with access to a wide range of spatial biodiversity layers to help visualize biodiversity risks and opportunities and inform decision-making
Science Based Targets Network (SBTN) Initial Guidance for Business	Provides initial guidance to help businesses establish and measure science-based targets for nature	Supports any company interested in establishing science-based targets for nature
Sustainability Policy Transparency Toolkit (SPOTT)	A tool to help manage environmental risk through commodity assessments	Helps the financial sector and supply chain stakeholders to manage ESG risk through transparency assessments of soft commodity producers and traders
TNFD Nature-Related Risk & Opportunity Management and Disclosure Framework	Serves as the main global corporate risk management and disclosure framework	Helps businesses to understand and report on nature-related risks and opportunities
Trase	Visualizes the trade and financing of commodities driving deforestation worldwide	Allows commodity buyers, governments, and financial institutions to assess how trade and financing of global commodities are linked to deforestation

Sources: Eurasia Group and IBAT

Coming soon to businesses: Disclosure of nature impacts and dependencies

Following the breakthroughs achieved at COP15, nature performance will increasingly be mainstreamed into corporate accounting and disclosure, in line with target 15 of the GBF. Moving from theory to practice, however, will require coordination and consensus-building. Public and private sector collaboration, including through large coalitions, can help eliminate first-mover risks, set industrywide nature-positive targets, and pave the way for transformative change, akin to the efforts made on the climate front.

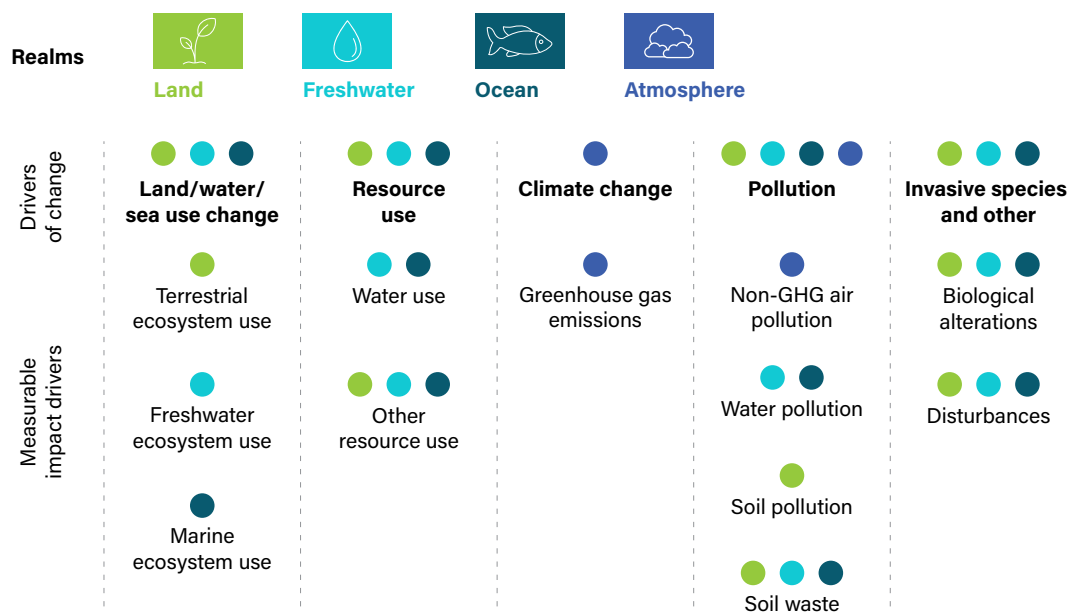
The TNFD is leading the way on corporate reporting on nature and is poised to serve as the main corporate risk management and disclosure framework. It has been garnering attention from governments and regulators, with a network of 350 institutions joining the TNFD Forum during the first six months of consultations. There is particular interest from countries in Asia, such as Japan and Indonesia, where the private sector is heavily reliant on nature's services.

The end goal of the TNFD is to help spur a shift in financial flows, reducing contributions to “nature-negative” outcomes and redirecting them toward nature-positive outcomes. This includes investments into innovative conservation initiatives, including PES and large-scale restoration projects.

The TNFD integrates a broad range of nature-related metrics to measure both nature impacts and dependencies across terrestrial, marine, freshwater, and atmospheric realms. Impacts range from land use change to water and soil health and invasive species (please see Figure 7). Businesses will need to identify priority impact drivers across their supply chains, which will be used to then identify a limited set of indicators and associated metrics based on companies' specific processes at the direct, upstream, and downstream levels.



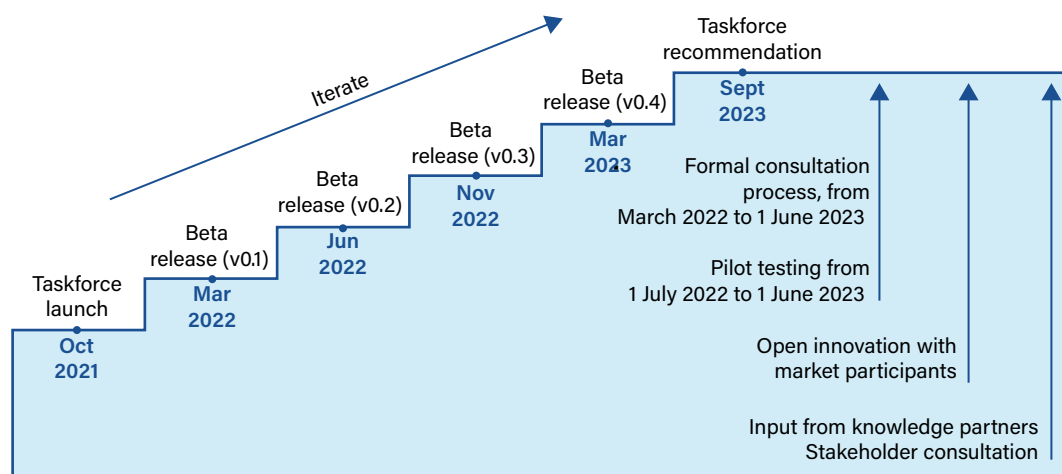
Figure 7. TNFD's assessment metrics for impact drivers



Source: TNFD

Countries will start requiring large financial institutions and companies to disclose their biodiversity impacts and dependencies. This is already the case in France, and other EU countries are likely to follow. With the TNFD framework set to be published in September, mandatory requirements may start to take effect in 2024, with a domino effect expected from one country to another and from one region to the next (please see Figure 8).

Figure 8. Timeline for TNFD framework



Source: TNFD



The immediate priority for large companies and financial institutions in 2023 will be to work with stakeholders and specialists to develop appropriate metrics and reliable data sharing systems (please see Box 4). Innovative thinking will be needed to design ways to track progress and translate existing data into financial metrics for integration into financial statements.

To kickstart disclosure efforts on nature, companies will need to allocate resources to track and report on progress. They will likely benefit from implementing a four-step approach, consisting of:

- **Assessing:** Measuring, valuing, and prioritizing their impacts and dependencies on nature to ensure they are acting on the most material ones;
- **Committing:** Setting transparent, time-bound, specific targets based in science to put their company on the right track toward operating within the planet's limits;
- **Transforming:** Shifting business strategy and models by avoiding and reducing negative impacts, ramping up restoration and regeneration efforts, collaborating across land and sea-scapes, and advocating for policy ambition; and
- **Disclosing:** Tracking performance and preparing to report material nature-related information publicly.

The TNFD framework is also aligned with the International Sustainability Standards Board (ISSB). Launched at the UN climate summit in Glasgow in 2021 (COP26), the ISSB aims to harmonize the fragmented disclosure landscape, broaden the scope of sustainability reporting beyond climate, and allow for proper comparison among corporations. The ISSB aims to finalize and publish its standards in early 2023. These recent developments confirm that nature is set to play a bigger role in ESG investing by the end of the decade.

Chapter 4: Is nature positive the new net zero?

Companies that are taking the lead and investing in nature stand to make considerable gains. It is estimated that investing in nature-positive business opportunities in the Asia-Pacific region could generate \$4.3 trillion and 232 million jobs annually by 2030, equivalent to 14% of the region's GDP.

The challenge of defining nature positive

Nature positive is emerging as the guiding star by which financial institutions and companies can set nature-related strategies; but a key challenge will be defining the term nature positive. To avoid greenwashing and spurious claims, a common definition is needed, with clear and quantifiable targets that the finance and business community can measure and report against. The COP15 final text removed any references to nature positive, but the issue will only grow in importance as private actors continue to use the term without authoritative guidance.

In the meantime, it is understood that nature-positive pathways will require companies to deliver—through their processes and activities—tangible, meaningful, and positive outcomes for nature across their supply chains.

In essence, firms will aim to close the loop on environmentally damaging activities by leveraging the influence of both downstream and upstream value chain actors, recognizing that they generate impacts beyond their direct operational footprint. For example, mineral water companies can work with upstream actors to improve sustainable water extraction and protect aquifer ecosystems while encouraging circularity by teaming with retailers to implement deposit schemes.

To contribute to the goal of reversing biodiversity loss by 2030, companies will need to leverage the potential for positive outcomes and transition from a “do-no-harm” approach to a nature-



positive approach. For instance, mining projects typically use less than 10% of the land granted as concession, which opens avenues for conservation and restoration projects at scale.

To address some of the confusion about nature positive, the IUCN has launched a working paper on what nature positive means and is working to develop a quantitative methodology to measure and track contributions toward protecting and restoring nature, based on global standards and data.

No one-size-fits-all approach

To be successful, nature-positive outcomes will need to consider both the direct, site-level impacts as well as the indirect, wider land- and seascape implications. Decisions made in boardrooms will need to factor into feasibility at the local landowner level.

Businesses are increasingly looking into setting nature-positive targets, much as they have done for carbon neutrality in the past. Extractive companies are progressively moving from a project-by-project approach to firmwide nature-positive goals. Central banks, meanwhile, are starting to implement “stress tests” on nature, based on their experience with carbon due diligence. Investors are also starting to integrate nature into their due diligence processes and screening criteria for investment. This will help them divest from harmful investments and move toward nature-friendly investments. Furthermore, leading investors are creating incentives for nature preservation by lowering interest rates for climate-neutral and nature-positive initiatives.

There is no one-size-fits-all approach to becoming nature positive. In fact, different combinations of actions can lead a business down this path. For example, a paper manufacturer may seek to restore forests by supporting nature-based solutions to meet both its climate and nature targets while providing locally dependent communities with sustainable livelihoods.

In practice, various approaches will look different from one company to another depending on the market, the commodity used, and areas of operations; but emerging guidance essentially covers four questions:

- **Where are you now?** The first step is to understand a company’s material impacts and dependencies on nature. This is typically conducted iteratively, starting with a rapid qualitative or semi-quantitative materiality assessment that flags key value-chain components for inclusion in a more focused and quantitative footprint assessment.
- **Where do you want to be?** Understanding a company’s nature footprint will show the scale of action required to become nature positive. A company will want to set realistic, time-bound, quantitative targets aligned with the Global Goal for Nature, for instance.
- **How can you get there?** Once the scale of ambition is set, a nature-positive strategy will translate corporate ambition into a coherent business plan, identifying the near-term actions to start a nature-positive journey and gain recognition for supporting global goals.
- **How can you demonstrate progress?** There will be growing calls to report on progress, learn what works, adapt along the way, and improve over time. Because going nature positive means being part of a wider systemic transformation, it will be critical for businesses to be transparent about actions and outcomes.

A rising number of Asian firms are following this trend, leading to a likely domino effect across industries and countries.



Box 4: Nature-positive action in Asia

As an expanding number of Asian companies are taking meaningful steps to protect nature, different combinations of actions are emerging across countries and industries:

- **Tata Steel** has a public commitment to conserve, enhance, and restore biodiversity in its present and prospective areas of operation and across its supply chain, including the upstream raw material mining sites, the manufacturing plant sites, and downstream processing units. Tata Steel has also pledged to avoid operational activities near sites containing globally or nationally important biodiversity.
- **Suntory Group** strives to conserve and regenerate biodiversity through local water source conservation efforts and sustainable agriculture to protect ecosystems for the future. Its efforts have led to the expansion of 12,000 hectares of “Natural Water Sanctuaries” in Japan, an initiative to protect and manage forestlands rich in biodiversity at the water source of its plants. At present, these forestlands replenish more than double the amount of groundwater used in Suntory’s plants in the country. At its wineries in France and Japan, it has introduced regenerative agriculture such as “cover cropping” to help minimize the use of pesticides and fertilizers, while providing a natural nutrient cycling system to enhance soil health. And the company has recently embarked on pilot projects with local barley farmers in the UK and corn growers in the US. It also has a target to make all its PET bottles sustainable by 2030 and has been working on innovative recycling technologies with partners.
- **Schneider Electric**, a company with a substantial footprint across Asia, is “committed to achieving net-zero biodiversity loss in its direct operations by 2030 and aligning biodiversity objectives with science; developing solutions and technologies that contribute to the preservation of biodiversity, by optimizing the use of resources over their entire lifecycle.” Schneider Electric is part of a growing number of leading companies committed to eliminating single-use plastics from packaging.

Getting ahead on nature

Transforming a business to become nature positive will likely be a bumpy and challenging process, given the gap between the level of awareness and the urgent need to act. Key barriers cited by industry for inaction include the lack of clear targets and definitions, data limitations, and first-mover risks. Companies are starting to overcome these barriers amid mounting pressure from activists, financial institutions, and governments to take action to protect and restore nature.

- **Technological innovations** will allow businesses to accurately measure the state of nature, from using satellites to count animals and plants from space to measuring species diversity from DNA collected from a drop of water.
- **Ongoing tightening of legislation** and industry standards will help forward-looking firms gain a competitive advantage by securing a place in a nature-friendly market.
- **Industrywide initiatives** will provide avenues for deeper understanding of nature trends while allowing industry actors to future-proof policies and practices on a level playing field. These initiatives can help eliminate first-mover risks, set industrywide nature-positive targets, and pave the way for transformative change.



Quick wins

Although there is a long way to go, there are some quick wins that can help companies get ahead and set them on the path to nature positive. To do this, corporations and financial institutions can take stock of:

- Their own siloed nature-related initiatives that could be scaled up, especially if such initiatives are generating climate co-benefits;
- Existing nature-positive strategies in their industry to assess potential for replicability and identify best practices; and
- The regulations and information they would need from policymakers to better mainstream nature into their decision-making processes (for example, tighter restrictions on protected areas, more granular data on nature loss, and clearly defined nature-related concepts).

Moreover, businesses can take practical and low-risk steps to understand and reduce their nature impacts and dependencies. With climate and sustainability often used as synonyms, many commitments and initiatives that belong to the realm of biodiversity (for example, soil health, soil waste, and biological alterations) could be unbundled to form the basis of corporate nature strategies. Such strategies can then be expanded over time to cover the numerous drivers of nature loss.

Practical steps to make positive contributions to nature

Although there are different potential routes to assisting in nature's recovery, they all center around a series of successive steps:

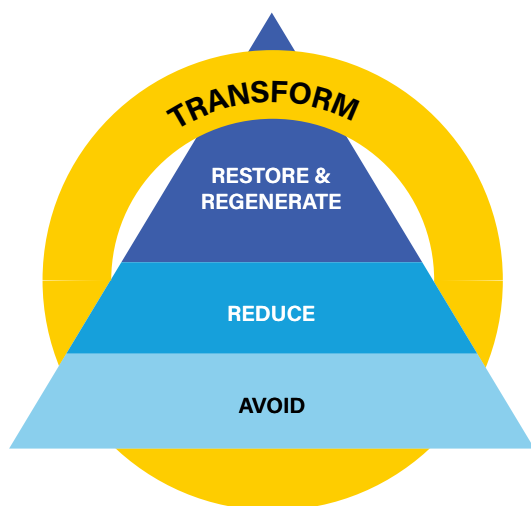
1. **Prepare.** It is important to understand your business case or rationale for biodiversity and how it fits within the company's business processes and corporate vision. First, determine the level of ambition and what the company wants to achieve. Then, raise awareness about nature and its importance to the business and ensure sufficient resources can be allocated to take meaningful action.
2. **Assess.** It is helpful to undertake a rapid materiality assessment to understand significant types of impacts and dependencies. This can be followed by conducting a more in-depth supply chain assessment to understand the relative significance of impacts, account for dependencies, and start to prioritize efforts. Guidance developed by both the [SBTN](#) and the [TNFD](#) can help businesses identify and manage priority environmental impacts (for example, land or water use, pollution, etc.), dependencies, and locations. Companies will also need to determine the scope of impacts. These should typically go beyond direct operations to include upstream and downstream effects.
3. **Prioritize.** Firms should interpret and prioritize the impacts and dependencies for the business across the value chain: Identify priorities for target setting; and identify opportunities to achieve climate, social, and nature goals through cross-cutting programs. These could include using nature-based solutions such as reforestation efforts to bring back nature, sequester carbon, and provide local community benefits. Lastly, identify appropriate downstream business partners to share responsibility as well as local conservation organizations to support implementation of conservation actions.
4. **Lead.** Next it will be key to formulate and integrate a biodiversity strategy embedded within existing corporate processes, including setting meaningful targets. Consider signing up to sectoral and global initiatives advocating for positive change, such as the SBTN's [Corporate Engagement Program](#). Make sure to engage with and influence policymakers to adopt specific policies and incentives for nature.

5. Measure. Firms can start by identifying appropriate impact- and dependency-focused metrics and datasets—for example, using the TNFD’s latest draft [Nature-Related Risk and Opportunity Management and Disclosure Framework](#) and online tools available through the IBAT. Next, undertake a detailed assessment to understand current baseline conditions. And start testing application of methods using identified indicators and define a methodology.

6. Implement. To implement the strategy and action framework, work toward defined goals to reduce nature impacts across the supply chain. Follow the action framework to Avoid, Reduce, Regenerate, Restore, and Transform (AR3T) impacts, set by the SBTN to align corporate action with environmental science (please see Figure 9).

7. Track. Lastly, make sure to monitor and report on progress for selected indicators. And review and adapt plans to stay on track to achieve nature goals.

Figure 9. Action framework (AR3T) of the Science-based Targets for Nature (SBTN)



Source: SBTN

SUNTORY

Brasília London New York San Francisco São Paulo Singapore Tokyo Washington D.C.

This report is based on the opinions of Eurasia Group analysts and various in-country specialists. Eurasia Group is a private research and consulting firm that maintains no affiliations with governments or political parties.

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