

# Nature Positive and Corporate Value

## —TNFD, International Disclosure Standards, and New Corporate Strategies Enabled by Nature Tech—

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\*The views expressed in this article are those of the authors and do not necessarily reflect the official positions of their affiliated organizations.

### 1. Introduction — From Net Zero to Nature Positive

Just as net zero has become a common language for addressing climate change, a new global goal—Nature Positive—is rapidly gaining traction in the field of biodiversity. This goal seeks to halt and reverse nature loss by 2030 and achieve a society living in harmony with nature by 2050 [1].

The vision was internationally established through the Kunming–Montreal Global Biodiversity Framework, adopted at the 2022 Conference of the Parties (COP15) to the Convention on Biological Diversity (CBD). This paper examines the link between disclosure frameworks originating from this international agreement and corporate strategy through selected case studies, and considers the evolving relationship between corporate value and strategy in the Nature Positive era.

In recent years, net zero and biodiversity conservation have come to be understood as mutually dependent challenges.

While climate change accelerates biodiversity loss, natural capital—including forests, wetlands, and marine ecosystems—functions as a carbon sink that contributes to emissions reduction and strengthens adaptive capacity [2]. Nature Positive should therefore not be regarded as an additional policy measure, but rather as a foundation supporting the effectiveness of net zero strategies.

### 2. Mapping the International Framework Landscape — GBF, TNFD, ISSB, CSRD, and TCFD

International frameworks surrounding nature-related disclosures have developed in parallel across policy objectives, voluntary disclosure frameworks, international standards, and statutory regimes, making the overall architecture not always intuitive. The table below organizes the principal frameworks by category and function, providing an overview of disclosure governance in the Nature Positive era.

**Table. Characteristics and Roles of International Frameworks for Nature-Related Disclosure**

Category	Framework	Characteristics and Role
International Policy Objective	<b>GBF</b> — <b>Kunming–Montreal Global Biodiversity Framework</b>	An international target adopted at COP15 under the Convention on Biological Diversity (CBD), the GBF consists of four global goals for 2050 and 23 targets for achievement by 2030. Under the core “30 by 30” target, national governments that have signed and ratified the CBD are expected to align their policies and action plans toward its realization. Corporate obligations are indirectly operationalized through domestic regulatory systems established in response to the framework (such as the CSRD in the EU). Target 15, for example, calls on governments to implement legal and policy measures that encourage companies to assess and disclose their dependencies, impacts, and risks related to nature [3].

Disclosure Framework	<b>TNFD</b> — <b>Taskforce on Nature-related Financial Disclosures</b>	The TNFD is a market-led, science-based international initiative centered on market participants such as investors, financial institutions, and corporations, promoting enhanced disclosure of nature-related risks and opportunities [4]. Its final recommendations, published in 2023, present a framework for identifying, assessing, managing, and disclosing nature-related issues for both corporations and financial institutions [5]. While the GBF sets societal goals, the TNFD functions as the analytical and disclosure infrastructure supporting their implementation. Although voluntary, it is increasingly serving as a key reference point in the design of national disclosure regimes [6][7]. Japan has the largest number of TNFD adopters worldwide, demonstrating a particularly high level of participation in the global context [8].
International Standard-Setting Body	<b>ISSB</b> — <b>International Sustainability Standards Board</b>	The ISSB operates under the nonprofit IFRS Foundation and is responsible for developing global sustainability disclosure standards for investors [9]. It has already issued IFRS S1, which establishes comprehensive disclosure principles for sustainability-related financial information, and IFRS S2, which sets out disclosure requirements for climate-related risks and opportunities [9][10]. The ISSB is currently advancing standard development in the biodiversity domain under the project titled BEES (Biodiversity, Ecosystems and Ecosystem Services) [11].
Statutory Disclosure Regime	<b>CSRD</b> — <b>Corporate Sustainability Reporting Directive</b>	The CSRD is an EU directive applied through transposition into national law by member states and mandates the disclosure of sustainability information for large companies and listed entities [12]. Specific requirements are defined by the European Sustainability Reporting Standards (ESRS) [12]. Regarding biodiversity, ESRS E4 requires companies to disclose both their impacts on and dependencies upon biodiversity and ecosystems, explicitly adopting the principle of double materiality [13].
Disclosure Framework	<b>TCFD</b> — <b>Task Force on Climate-related Financial Disclosures</b>	The TCFD was established to advance climate-related financial disclosures. Its four-pillar structure—governance, strategy, risk management, and metrics and targets—has been incorporated into IFRS S2, carried forward into the TNFD, and widely embedded in disclosure regulations across jurisdictions. Following the integration of the core elements of the TCFD recommendations into IFRS S2, the Financial Stability Board determined that the task force had fulfilled its mandate, and the TCFD was disbanded in October 2023 [9]. Nevertheless, the framework has become institutionally embedded and continues to function as a de facto global standard—effectively a common language for disclosure.

As illustrated above, international governance surrounding nature-related disclosure exhibits a multilayered structure: policy objectives articulated by the GBF serve as the starting point; voluntary disclosure frameworks such as the TNFD and TCFD provide the operational foundation; investor-oriented standards are developed by the ISSB; and statutory disclosure regimes, exemplified by the CSRD, are being introduced in parallel. Nature Positive acquires practical significance only when it is connected to corporate strategy within this multilayered governance architecture.

### 3. Recent Developments in Policy and Regulation

#### 3.1 Progress in International Policy and Institutionalization of Nature-related Disclosure

Following CBD COP16, progress has been made in operationalizing the institutional framework for measuring, reporting, and reviewing biodiversity to support the implementation of the Global Biodiversity Framework (GBF) [14]. These developments are understood to further reinforce the direction toward systematic collection and disclosure of biodiversity-related information by both national governments and corporations.

At the next CBD COP17 (October 2026), a global review of collective progress toward the GBF is scheduled,

representing an important milestone that will also contribute to improving the comparability of national efforts [14]. The ISSB is likewise examining the international standardization of nature-related disclosures through its BEES project and aims to present an Exposure Draft outlining additional disclosure requirements related to nature by the time of CBD COP17 [11].

### **3.2 Expansion of Nature-related Regulation in Europe and Its Role as a Growth Strategy**

Even prior to the adoption of the GBF, the European Union positioned the European Green Deal at the core of its growth strategy, advancing climate action, biodiversity conservation, and the circular economy in an integrated manner. This policy trajectory has been concretized in the Nature Restoration Law, enacted in 2024, which mandates the restoration of at least 20 percent of degraded terrestrial and marine ecosystems by 2030 and provides for a phased expansion toward 2050 [15].

Also noteworthy is the EU Regulation on deforestation-free products, which seeks to reduce both greenhouse gas emissions and biodiversity loss by preventing products associated with deforestation from entering the EU market [16]. The regulation requires that covered commodities—including cattle, soy, palm oil, and coffee—be deforestation-free, comply with the legal requirements of the country of production, and be verified through due diligence as conditions for market placement [17].

Underlying these policy designs is the recognition that the degradation of natural capital can undermine the foundations of medium- to long-term economic growth. The European Commission positions nature restoration as a foundation supporting sustainable economic growth and presents the European Green Deal as the growth strategy responsible for realizing this vision. By integrating environmental and industrial policies and promoting corporate investment and technological innovation through regulation, the EU seeks to create new domains of economic growth.

## **4. TNFD and the Trajectory of Standardization**

### **4.1 Core Structure of the TNFD**

The TNFD's final recommendations are structured around four pillars: governance, strategy, risk and impact management, and metrics and targets. These recommended disclosures are designed to provide a framework through which companies identify, assess, manage, and disclose their nature-related dependencies,

impacts, risks, and opportunities.

Taking into account the interactions between business and the natural environment, the TNFD assumes that nature-related issues may arise across business operations and value chains. Under the strategy pillar, disclosure is required regarding the location of assets and activities associated with material nature-related issues, thereby indicating that geographic context should be considered in the assessment of nature-related risks and opportunities.

In addition, the TNFD presents the LEAP approach (Locate, Evaluate, Assess, Prepare) as supplemental guidance for identifying and assessing nature-related dependencies, impacts, risks, and opportunities. Although LEAP does not itself constitute a recommended disclosure, it supports companies in systematically evaluating nature-related issues and linking the results to disclosures under strategy, risk management, and metrics and targets.

Furthermore, under the metrics and targets pillar, companies are required to disclose the metrics and targets used to assess and manage not only nature-related risks and opportunities but also their dependencies and impacts on nature. These recommendations are designed to provide decision-useful information to report users, including providers of capital [5].

### **4.2 Relationship with the ISSB: Incorporation into Standardization and the Continued Practical Role of the TNFD**

In developing nature-related disclosure standards, the ISSB has made clear its intention to proceed with standard-setting while referring to the TNFD framework [18]. Staff materials related to the BEES project indicate that, in its consideration of nature-related disclosure standards and educational materials, the ISSB intends to draw upon the TNFD's recommendations, metrics, and supplemental guidance—including the LEAP approach [19]—reflecting ongoing progress toward the international standardization of nature-related information [18]. In this way, the TNFD serves as a pathway for responding to emerging global disclosure demands.

## **5. Corporate Case Studies — Embedding Nature Positive into Strategy**

### **5.1 Unilever — Implementation Strategy and Monitoring of Natural Capital**

Under its growth strategy, the *Unilever Compass*, the company has incorporated the protection and regeneration of nature as a central strategic priority [20]. In 2020, it

established the Climate & Nature Fund and announced a plan to invest a total of €1 billion by 2030 in projects addressing climate action, nature protection and restoration, and resource efficiency [21].

On the implementation front, Unilever is advancing the sourcing of deforestation-free raw materials and expanding regenerative agriculture, with a stated goal of conserving and restoring 1.5 million hectares by 2030 [20]. Targets such as deforestation-free sourcing and the area of land restored have been established for these initiatives, and progress is being systematically monitored [21].

The company also collaborates with organizations such as NASA Harvest and NatureMetrics to monitor the progress of regenerative agriculture and changes in biodiversity using satellite technologies, remote sensing, and environmental DNA (eDNA) sampling. In addition, it is strengthening supply chain capabilities and investing in infrastructure to maintain and enhance deforestation-free sourcing [22].

## 5.2 Nestlé — The Current State and Future Direction of Natural Capital Management

Nestlé's key performance indicators (KPIs) related to biodiversity and ecosystems consist of two primary measures: (i) the proportion of key raw material supply chains assessed as deforestation-free, and (ii) the proportion of key raw materials sourced from farmers implementing regenerative agriculture [23].

The evaluation of deforestation-free status is intended to confirm that covered commodities are produced on land not associated with deforestation. This assessment is conducted using a risk-based approach grounded in supply chain mapping and combines traceability, on-site investigations, and satellite monitoring to avoid sourcing from high carbon stock forests, wetlands, peatlands, protected areas, and similar environments. As of 2024, 93.5 percent of the relevant supply chains have been assessed as deforestation-free [23].

Approximately two-thirds of the company's greenhouse gas emissions originate from agriculture, positioning the promotion of regenerative agriculture as a critical initiative. Targets have been set to source 20 percent of key raw materials from regenerative agriculture by 2025 and 50 percent by 2030; the share reached 21.3 percent in 2024 [24].

Furthermore, Nestlé has introduced additional indicators to enhance the evaluation of regenerative agriculture. Although these are not yet part of the current reporting

KPIs, the company has documented the use of measurement items that directly capture ecosystem functions, including soil health indicators such as organic matter, the area and connectivity of natural and semi-natural habitats on farmland, crop diversity, and the extent of agroforestry adoption [25].

Taken together, these initiatives indicate a shift beyond the reduction of environmental impacts toward the incorporation of the condition of natural capital itself as an object of measurement. This suggests that the advancement of corporate natural capital management depends significantly on the development of measurement technologies and data infrastructure.

## 5.3 Startups and Nature Tech — Bridging the Data Gap

One of the constraints in advancing nature-related disclosure is the shortage of reliable natural capital data. Nature tech startups are increasingly assuming a role in bridging this data gap. The TNFD has systematically organized tools applicable to nature-related risk assessment within its *Tools Catalogue*, including satellite remote sensing, geographic information systems (GIS), land-use and habitat databases, and biodiversity survey technologies such as eDNA and bioacoustic analysis [26]. Large corporations are also expanding their use of these tools. Unilever, for example, is undertaking initiatives to track changes in farmland and biodiversity conditions using satellite data and eDNA [21]. Technologies that monitor biodiversity change through environmental sound have likewise been highlighted as tool examples by the TNFD [26].

As of November 2025, more than 700 companies—including Japanese firms—have registered as TNFD Adopters, and demand for tools that support the collection and visualization of nature-related data is expected to grow further [8]. As the institutionalization of nature-related disclosure progresses, these data infrastructures are likely to become critical information foundations supporting corporate decision-making and the credibility of disclosures.

## 6. Double Materiality and Impact Investing

In recent years, financial markets have increasingly moved to incorporate nature-related factors into investment decision-making. Within the field of impact investing, methodologies are being developed for biodiversity footprints, assessments of investment portfolio alignment with the targets of the Global Biodiversity Framework (GBF), and the quantification of financing gaps for the

Nature Positive transition [27][28][29]. Pilot applications have already begun among several leading financial institutions.

Pressure on corporations to understand their dependencies and impacts on nature is likewise intensifying. The EU's Corporate Sustainability Reporting Directive (CSRD) adopts double materiality as a legal principle, requiring the assessment of both (i) financial materiality—how sustainability matters, including nature degradation, affect enterprise value—and (ii) impact materiality—how corporate activities affect the environment and society, including biodiversity and ecosystems [30]. ESRS E4 further requires the disclosure of material corporate impacts on biodiversity and ecosystems [31]. In addition, the TNFD, as an international disclosure framework, organizes nature-related dependencies and impacts and supports the identification of risks and opportunities relevant to enterprise value [5].

Although a unified methodology for directly translating nature-related risks into corporate value has not yet been established, processes for evaluating financial implications through the identification of dependencies and impacts, as well as scenario analysis, are gradually being introduced [27][30]. The critical perspective is not to frame these efforts as trade-offs against short-term returns, but rather to determine how nature-related strategies can be designed to enhance corporate value over the medium to long term. In Europe in particular, initiatives are advancing that seek to reconcile the reduction of nature-related risks with long-term corporate value creation through financial schemes and investment funds dedicated to marine and forest conservation. For example, BNP Paribas, in partnership with the Blue Alliance, established an impact debt facility aimed at coral reef conservation and the improvement of local economies [32]. It has also launched the BNP Paribas Future Forest Fund, which focuses on investment in sustainably managed forests [33].

More recently, interest has grown in integrating the value of natural capital into markets in tradable forms similar to carbon credits. At the same time, challenges have been identified regarding credit quality, additionality, permanence, and impacts on local communities. The advancement of natural capital data and monitoring technologies is therefore expected to become increasingly important as a foundation supporting the credibility of nature-related investments and credit markets.

## 7. Natural Capital Data Technologies and Implications for Japan

Many companies are confronting the practical challenge of

how to visualize and quantify natural capital. TNFD analyses indicate that the assessment of nature-related risks and opportunities remains complex, with the development of necessary datasets and the selection of appropriate evaluation metrics posing significant hurdles [34].

Nature tech has attracted attention as a means of addressing these bottlenecks. The TNFD has developed a *Tools Catalogue* that systematizes technologies such as satellite remote sensing, geographic information systems (GIS), land-use and habitat databases, eDNA analysis, and bioacoustics [26]. By combining these tools, an infrastructure is emerging that enables the continuous and efficient acquisition of location-specific nature-related indicators.

Looking ahead, Japanese corporations, research institutions, and technology vendors have substantial opportunities to leverage these data infrastructures to enhance TNFD alignment, support KPI design for Nature Positive management, and contribute to regional natural capital accounting as well as investment and financing assessments.

## 8. Conclusion — Corporate Value in the Nature Positive Era

Whereas climate change is framed around the clear objective of net zero, biodiversity remains an area in which determining what to measure and how to measure it continues to present significant challenges. In this context, the TNFD, ESRS E4, and the ISSB's BEES project can be understood as institutional initiatives aimed at connecting nature-related risks with corporate value.

What is required of companies is not to frame ESG considerations and short-term profit as mutually opposed, but rather to understand their dependencies and impacts on natural capital and to integrate associated risks and opportunities into financial decision-making and investment strategy. In this process, the data infrastructures provided by nature tech play a critical role in visualizing corporate relationships with nature from both quantitative and qualitative perspectives.

Corporate value in the Nature Positive era is not merely about environmental consideration; it lies in the capacity to redesign business models on the premise of natural capital constraints and opportunities, thereby reconciling sustained profitability with social trust. The TNFD and the ISSB provide the common language necessary for this transformation.

In Japan as well, startups supporting the visualization of

natural capital are emerging beyond traditional research institutions, and the formation of a private-sector-led ecosystem is beginning. Nature Positive is not simply a matter of regulatory compliance; it also represents an opportunity to connect Japan's long-standing cultural values of harmony with nature to the international language of disclosure and investment. Japanese corporations and financial institutions are expected to leverage this common language and proactively shape the future.

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## Nature AI LUCA

Nature AI LUCA is a nature-tech venture engaged in the research and development of acoustic AI aimed at visualizing and quantifying biodiversity. The project is advancing proprietary AI technology that analyzes environmental sound data and has released a prototype application capable of identifying bird species from their calls.



The developed acoustic AI application automatically identifies bird calls and generates data on species classification and habitat trends.

As the TNFD framework and other international disclosure standards continue to evolve, Nature AI LUCA is developing a data infrastructure to support corporate assessments of nature-related impacts and regional ecosystem monitoring. By advancing technologies that link natural capital with corporate value, the venture seeks to contribute to the foundation of a nature-positive society through collaboration with industry, government, academia, and the financial sector.

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