First Sentier MUFG
Sustainable Investment Institute

State of Nature-related Disclosures 2026

TNFD Alignment of Nature-related Disclosures and the Nature-data Ecosystem

First Sentier MUFG | Sustainable Investment Institute

November 2026



About the Institute

The First Sentier MUFG Sustainable Investment Institute (the Institute) produces research to advance sustainable investing and support better-informed investment decisions. As investors, both First Sentier Group and MUFG recognise our responsibility to society and believe that financial returns should be considered alongside the long-term wellbeing of communities, economies and the environment.

The Institute commissions research on sustainable investment themes, examining complex global challenges from multiple perspectives. As sustainability considerations become increasingly important to investors, there is a growing need for rigorous analysis that helps explain the drivers, risks and opportunities associated with these issues. By improving understanding of these factors, investors can make more informed decisions and use their influence to support positive outcomes for both society and the environment.

The Institute is jointly supported by First Sentier Group (FSG) and Mitsubishi UFJ Trust and Banking Corporation, a consolidated subsidiary of MUFG. Representatives from both organisations contribute to the Institute's activities and help shape its research agenda.

An Academic Advisory Board supports the Institute by providing independent guidance on its sustainability and sustainable investment research initiatives. The Board brings together leading experts from academia, with expertise spanning responsible investment, climate science and related sustainability disciplines. Through independent oversight and expert challenge, the Board helps ensure the Institute's research meets high standards of academic rigour, relevance and quality.

The quality and impact of the Institute's work have also been recognised through industry awards. Recent achievements include winning the Investment Week Sustainable Investment Award for Best Sustainable Educational Content for Investors 2026, receiving the Investors for Purpose Best Content Awards for Natural Capital and Biodiversity in 2026 and in Climate Action 2025, as well as Highly Commended recognition at the Environmental Finance Sustainable Investment Awards 2026. Institute research has also helped inform award-winning investor engagement initiatives, including a First Sentier Group Environmental Finance ESG Engagement Initiative of the Year award in 2023.

Contact

institute@firstsentier.com
www.firstsentier-mufg-sustainability.com
www.mufg-firstsentier-sustainability.jp

Cover photo: emma-francis-vpHCfunwDrQ-unsplash

The Institute's sponsors and partners

First Sentier Group

About First Sentier Group

First Sentier Group (formerly First State Investments) is a global asset management group focused on providing high quality, long-term investment capabilities to clients. We bring together independent teams of active, specialist investors who share a common commitment to responsible investment and stewardship principles. These principles are integral to our overall business management and the culture of the firm.

All our investment teams – whether in-house or individually branded – operate with discrete investment autonomy, according to their investment philosophies.

www.firstsentierinvestors.com

About MUFG

Mitsubishi UFJ Financial Group, Inc. (MUFG) is one of the world's leading financial groups. Headquartered in Tokyo and with over 360 years of history, MUFG has a global network with approximately 2,000 locations in more than 40 countries. The Group has about 150,000 employees and offers services including commercial banking, trust banking, securities, credit cards, consumer finance, asset management, and leasing. The Group aims to "be the world's most trusted financial group" through close collaboration among our operating companies and flexibly respond to all of the financial needs of our clients, serving society, and fostering shared and sustainable growth for a better world. MUFG's shares trade on the Tokyo, Nagoya, and New York stock exchanges.

www.mufg.jp/english

About the Trust Bank

Mitsubishi UFJ Trust and Banking Corporation, as a core member of MUFG, provides its customers with a wide range of comprehensive financial solutions leveraging unique and highly professional functions as a leading trust bank. Such financial solutions include real estate, stock transfer agency, asset management and investor services, and inheritance related services, in addition to banking operations. The Trust Bank aims to realize its vision to be the trust bank that can create a safe and enriching society and future alongside customers through trust; as such, its key concept is "Create a Better Tomorrow".

https://www.tr.mufg.jp/english

About UTS

UTS Institute for Sustainable Futures was commissioned by the Institute to author this report. It was produced with guidance from Sudip Hazra (Director, the Institute), Yuichi Nakao (Manager, the Institute), Tomohiro Enomoto (Manager, the Institute), and Elena Zharikova (Research Analyst, the Institute).

This report was authored by Madeline Combe, Assoc Prof Catarina Pinto Moreira, Alison Atherton and Hollie Cheung with support from Prof Peter Leihn, Dr Rina Dhillon and Josie Toakley.

Acknowledgements

Thank you to Prof Timo Busch, School of Business, Economics and Social Science of University of Hamburg for his review of the report. We also thank the stakeholders who contributed to the research through participation in the interviews, including Mahima Sukhdev, Chief Growth Officer, GIST Impact and Will Zhao, Manager, Special Projects, GIST Impact; James Phare, CEO, Neural Alpha; Saksham Malhotra, Manager, Responsible Investment, HESTA; Johan Floren, Senior Adviser, AP7; Christian O'Dwyer, Nature and Biodiversity Product Manager, Bloomberg; and Cathrine Armour. We greatly appreciate their time and insights.

About UTS Institute for Sustainable Futures

Recognised globally for our commitment to positive social impact, UTS ranks among the world's top 100 universities and stands out as a leading partner in building a sustainable future. We work with our partners across the globe to create meaningful change, connecting you with subject matter experts and cutting-edge facilities so together we can tackle the world's big challenges.

The Institute for Sustainable Futures is an independent research institute within UTS. We conduct transdisciplinary, project-based research in line with our vision of creating positive change towards sustainable futures.

www.uts.edu.au/research/centres/isf



Photo: iStock

Contents

Executive Summary 4

Key findings and insights 6

1 Introduction 8

State of nature 9

Nature-related disclosures landscape 9

2 Method 12

Company sample selection 13

Company disclosure analysis 14

Data provision and collaborative engagement 15

Limitations of the research 15

3 State of Nature-related Disclosures by Sector 16

TNFD Core Disclosure Recommendations 18

2023–2026 Progress Snapshot 19

2023–2026 Cross Sector Insights 20

Examples of leading practice in areas relevant to the TNFD 2026 21

Extractives and Minerals Disclosure Analysis 22

Consumer Goods Disclosure Analysis 26

Food and Beverage Disclosure Analysis 30

Health Care Disclosure Analysis 34

Infrastructure Disclosure Analysis 38

Renewable Resources (Forestry and Timber) Disclosure Analysis 42

Resource Transformation (Chemicals and Fertiliser) Disclosure Analysis 46

Transport (Marine) Disclosure Analysis 50

4 Japan Spotlight 54

Japan Spotlight Disclosure Analysis 56

Summary 57

5 Key Disclosure Insights & Conclusion 60

Expectations for Companies 62

Expectations for Investors 63

6 Nature-related Data Developments 64

Nature-related data developments: summary 65

The nature-related data landscape 66

Key themes: the demand for decision-useful data 67

Diverse Investor Use Cases 68

Challenges and data gaps 69

Seven key tensions 70

Developments and trends 75

Key Takeaways for Investors 76

Key Insights and Conclusions 77

7 Nature-related Collaborative Initiatives 78

Nature-related collaborative initiatives 79

Investor experience of collaborative initiatives 83

Key Insights and Conclusions 84

8 Conclusion 86

These findings suggest a clear near-term agenda for investors 88

Looking Forward 89

9 Appendices 90

Acronyms 91

Glossary 95

Appendix A – Disclosure quality analysis 98

Appendix B – Details on nature-related collaborative initiatives 99

Important Information 102

Executive Summary

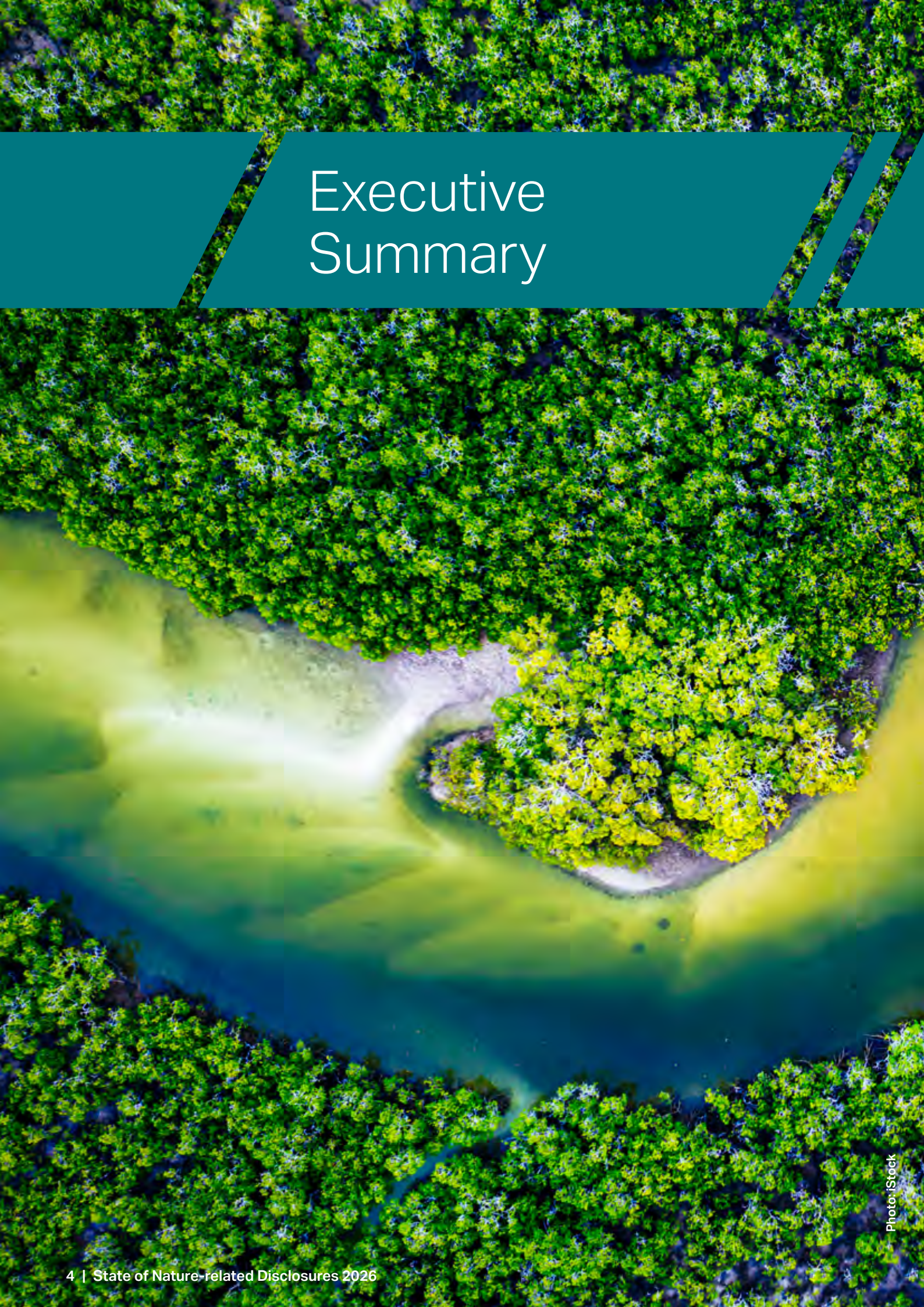


Photo: iStock

Multiple global indicators point to continued and, in some areas, worsening nature degradation. Global temperatures are reaching record highs, the Living Planet Index reports a 73% decline in monitored wildlife populations since 1970, and multiple planetary boundaries now breached.

At the same time, the economic consequences are increasingly material: over half of global gross domestic product (GDP) depends on nature, and ecosystem decline is already driving hundreds of billions of dollars in annual costs and risks. More than half of the market value of listed companies is now exposed to nature-related risks, accentuating the systemic financial significance of biodiversity loss and ecosystem degradation. Given this context, the importance of transparently disclosing nature-related impacts, dependencies, risks, and opportunities has been brought sharply into focus.

In July 2024, First Sentier MUFG Sustainable Investment Institute published its first report on the state of nature-related disclosures, based on analysis of data up to 2023 (the 2023 analysis). The 2023 analysis established an initial benchmark for nature-related disclosure among leading firms, finding that many were already broadly aligned with the Taskforce for Nature-related Financial Disclosures (TNFD) framework and had set relevant targets. It also identified the need for further maturation in disclosure to meet emerging TNFD expectations, particularly in moving from broad alignment toward more detailed and decision-useful reporting.

Three years on and nature-related disclosure is entering a new phase. The market has moved rapidly from early experimentation to growing adoption of the TNFD framework, International Sustainability Standards Board (ISSB), and updated global standards.

These developments have strengthened the case for considering nature-related issues as potentially financially material, particularly for investors with long-term horizons or exposure to nature-dependent sectors. They have also increased attention to the possibility of systemic implications.

This report (the 2026 analysis) re-assesses the state of nature-related reporting against the TNFD's 14 Core Disclosure Recommendations across a sample of 19 companies: the 16 firms first benchmarked in the 2023 analysis, supplemented by three additional Japanese companies spotlighted for their leadership in TNFD adoption.[1] We also report on the status of the nature data ecosystem, from the perspective of key stakeholders in this ecosystem, and the role of collaborative nature initiatives in advancing the assessment, monitoring, and management of nature-related exposures.

1 The report uses the TNFD as an analytical reference point and examines disclosure from the perspective of investors interested in nature-related risks, impacts and stewardship. Other investors may reasonably adopt different priorities or evidentiary thresholds depending on their mandates, time horizons, asset classes and regulatory contexts.

Key findings and insights

A story of progress

Overall, our 2026 analysis reveals that firms in most sectors continue to make progress aligning their disclosure with the TNFD framework. 100% of the 16 firms from our 2023 sample disclose information relevant to all 14 Core Recommendations assessed, up from the 56% reported in the 2023 analysis, and 31% of firms are now conducting nature-related scenario analysis, up from 0% in 2023.

Encouragingly, we observe meaningful progress across several of the TNFD pillars since the 2023 analysis. Companies in our sample are now moving beyond enhancing disclosure coverage toward practices that treat nature as a core input to strategy and capital allocation. The table below presents examples of leading practice observed in this year's assessment in areas relevant to the TNFD.

The proportion of companies adopting the mitigation hierarchy increased from 19% to 44% in 2026. Companies in Health Care, Renewable Resources, Infrastructure, and Food & Beverage sectors all progressed in terms of board oversight of nature-related objectives, embedding nature in executive remuneration and board member nature competencies. Most notably, however, spatial disclosures under 'Strategy D' have expanded to include more rigorous and comprehensive location-based assessments of assets and business activities. Under Risk Management, all but one company now adopts a double materiality approach and 69% report using the TNFD's Locate, Evaluate, Assess, Prepare (LEAP) approach. The three additional Japanese firms added to this year's sample were leaders on disclosure coverage in terms of governance, and metrics & target setting, but showed uneven results when it came to depth and quality.

Remaining gaps

These improvements notwithstanding, persistent gaps remain. Disclosure of business strategy impacts continues to be a challenge, with firms struggling to articulate how nature-related issues identified have materially shifted business strategies and practices. A similar story emerges for the current and forecasted financial impacts of nature-related issues, and disclosures related to soil and water pollution and invasive species continue to be only partially reported at best.

Reviewing company disclosures, at least nine companies in our 2026 sample cite data gaps as a key barrier impeding process. This is reflective of broader market sentiment, which shows that the underlying data ecosystem is still relatively nascent compared to climate and still developing. Some investors, particularly those undertaking detailed company engagement are demanding granular, location specific and asset level data that can link nature impacts and dependencies to financial performance. However, such data is often unavailable, inconsistent, or difficult to interpret.

Examples of Leading Practice in Areas Relevant to the TNFD (2026)

1	**Location-specific assessment**	Asset- and site-level GIS mapping of direct operations and supply chains against biodiversity databases, rather than country- or sector-level desktop screening.
2	**Double materiality**	Formal, scored assessment of both impact and financial materiality, calibrated with stakeholders and aligned to existing enterprise risk frameworks (e.g. under CSRD/ESRS).
3	**Scenario analysis**	Nature modelled as a distinct system with its own tipping points, tested across near-, medium- and long-term horizons rather than folded into climate scenarios alone.
4	**Financial relevance**	Nature-related risk translated into board-ready financial metrics: revenue-at-risk, capital-at-risk and multi-year discounted cash flow impacts.
5	**Strategic integration**	Nature transition treated as a capital allocation decision, backed by dedicated CAPEX and investment strategy, not managed as a standalone reporting exercise.
6	**Transition planning**	Nature targets embedded directly in segment-level growth plans and executive remuneration, with ring-fenced funding to support implementation.

These examples reflect practices increasingly observed among leading companies in areas relevant to the TNFD. They are not intended to imply that the TNFD prescribes a particular materiality approach."

As a result, investors continue to rely on high-level proxies that are insufficient for robust decision-making, or commission bespoke research through trusted intermediaries.

Investor perspectives

For more investors more engaged in nature, the focus is shifting from whether companies disclose on nature to whether those disclosures are credible, comparable, and financially meaningful. One possible next stage of market development is greater scrutiny of disclosure quality and accountability. Where nature-related issues are assessed as financially or impact material, this may also lead to closer integration with business strategy and capital allocation. Identifying nature-related risk and opportunities, requires not only meaningful data, but the ability to move beyond compliance signals to critically assess the substance of disclosures. These skills and competencies are still developing.

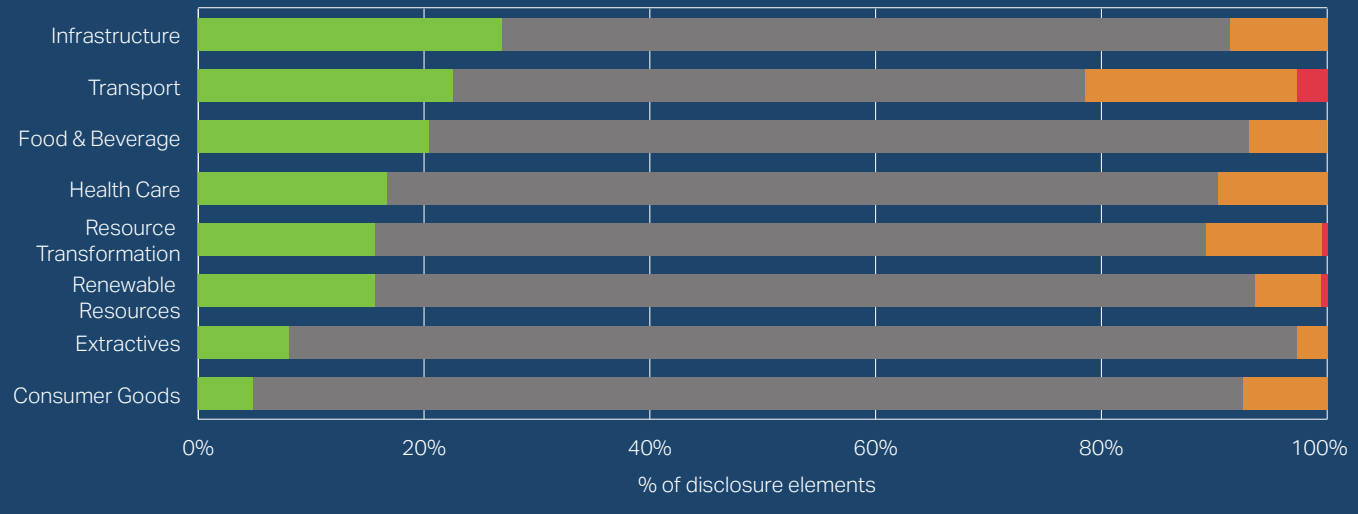
Collaborative investor initiatives reflect growing recognition that nature-related risks are systemic and require collective action. However, while these initiatives offer clear potential for shared influence and learning, their impact is currently constrained by unclear benchmarks, fragmented approaches, and limited evidence of measurable outcomes. They do however provide valuable opportunities for peer learning.

Disclosure evolution

Looking ahead, investors can reasonably expect nature-related disclosure to keep evolving rapidly, driven by both tightening regulation and the growing recognition of biodiversity's critical role in long-term value creation. Firms will face increasing expectations to enhance the specificity and accountability of their disclosures, and to integrate nature-related risks and opportunities into core business strategy rather than treat them as peripheral.

As the TNFD framework continues to gain traction, the next reporting cycle is likely to be judged less on whether firms disclose against the framework, and more on whether their disclosures demonstrate robust governance, decision-useful information and, where relevant, credible evidence of progress against stated nature-related objectives. Making this leap will require both companies and investors alike to innovate risk assessment and management tools, methods, and frameworks better suited to dealing with the complexity, uncertainty and non-linearity inherent to nature. In the following pages we present key findings from the report at the sector and TNFD pillar level, followed by recommendations for investors. These begin with near-term steps to strengthen how nature-related disclosures are used and interpreted, and extend to the structural shifts in portfolio construction and governance that our findings suggest will be needed over the longer term.

Disclosure Progress by Sector 2023–2026



Direction of change 2023–2026: Progressed · Unchanged · Remaining Gap · Regressed

1 Introduction

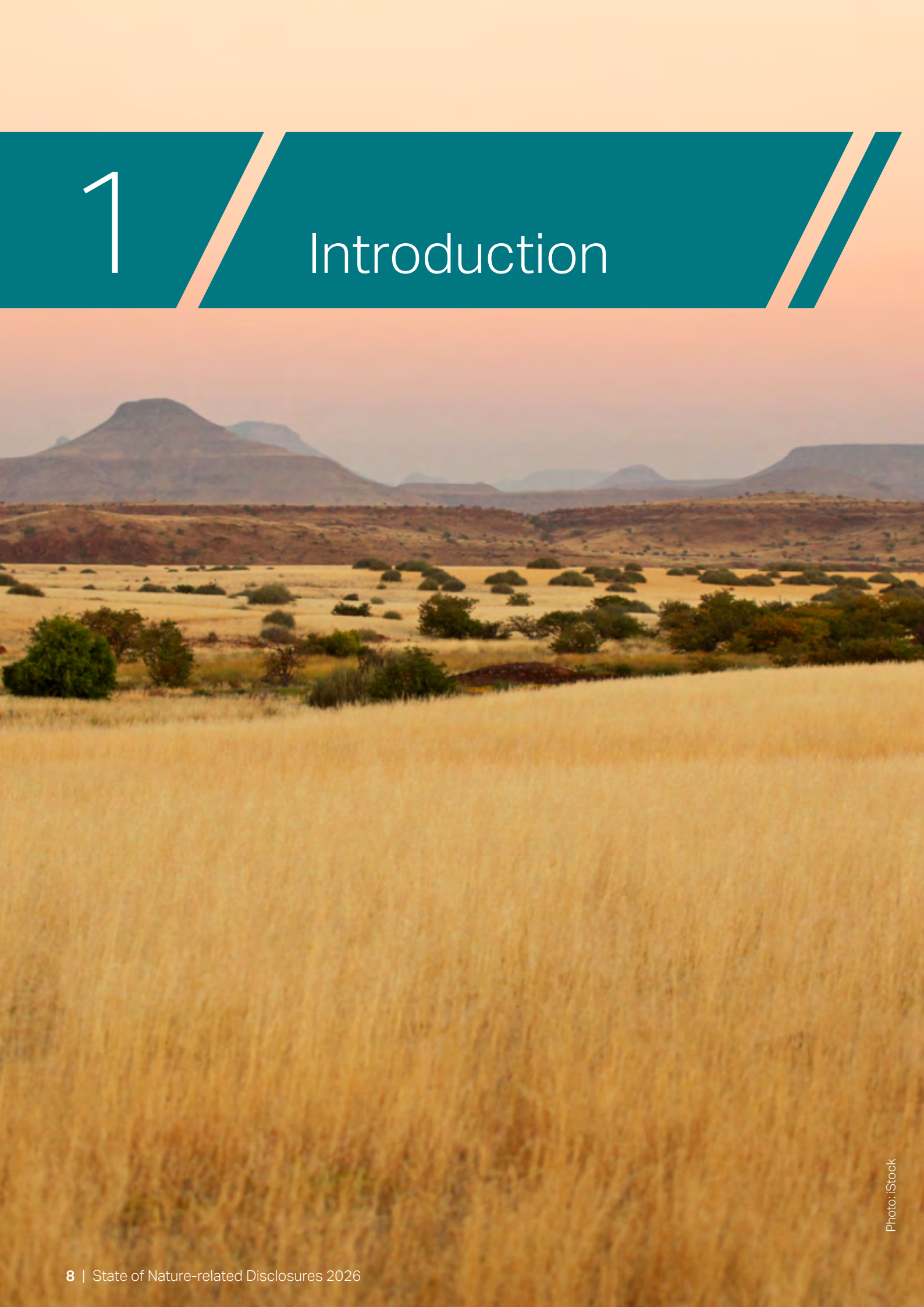


Photo: iStock

State of nature

Nature is being degraded at rates unparalleled in human history. 2024 was the hottest year on record globally.[2] The average size of monitored wildlife populations has declined by 73% between 1970 and 2020.[3] Habitat loss and degradation is the greatest threat to wildlife, followed by overexploitation, invasive species and disease. Mass coral bleaching events were recorded on the Great Barrier Reef in 2024 and 2025.[4] By 2025, seven of the nine planetary boundaries, measures of environmental health, had been crossed with the ocean acidification boundary assessed as breached for the first time.[5]

The economic impacts, real and potential, associated with this degradation, continue to grow. It is estimated that over half of global GDP (US$58 trillion) is moderately or highly dependent on nature and its services.[6] CERES has estimated that the decline of ecosystem services could negatively impact eight key economic sectors by as much as $430 billion annually.[7] The global cost of drought alone may be as much as US$307 billion annually.[8] More than half of the market value of listed companies across 19 major stock exchanges, approximately US$45 trillion, is exposed to material risks linked to ecosystem and biodiversity decline.[9]

Nature-related disclosures landscape

In this context, high-quality nature-related disclosure is more important than ever. In July 2024, First Sentier MUFG Sustainable Investment Institute published its first report on the state of nature-related disclosures based on analysis of data up to 2023 (the 2023 analysis). The 2023 analysis report assessed the state of nature-related disclosures at that time (up to 2023) for firms in priority sectors identified by the TNFD.[10] This provided a benchmark for nature disclosure at the upper boundaries of practice. It also explored how firms would need to mature their disclosures to meet emerging reporting expectations defined by the TNFD framework. The research found that the firms assessed were well progressed in aligning with the TNFD framework and all had set relevant nature-related targets.

Since then, the nature-related disclosures landscape has continued to advance. As of November 2025, the number of companies committed to TNFD-aligned disclosures (TNFD adopters) was 733, up from 502 in October 2024 and 320 in January 2024.[11] Japan was the top country with 210 adopters and in total there were over 500 TNFD-aligned reports in the market. The TNFD has released sector-specific guidance for several high-impact sectors. The landscape is gradually shifting from voluntary piloting towards regulatory integration. The ISSB originally committed to nature-related standard setting based on TNFD, pointing towards likely future mandates in jurisdictions adopting ISSB standards. In April 2026, ISSB announced they will release a Practice Statement Exposure Draft on nature-related disclosures in October 2026.[12] While a practice statement aligns more with voluntary guidance, it still provides the ISSB with a pathway for a standard-based outcome in the future.

2 World Meteorological Organization (2025). *WMO confirms 2024 as warmest year on record at about 1.55°C above pre-industrial level*

3 World Wildlife Fund (2024) *Living Planet Report*

4 Australian Institute of Marine Science (2025) *Coral bleaching events*

5 Stockholm Resilience Centre (2025) *Seven of nine planetary boundaries now breached*

6 PWC (2023) *Managing nature risks: From understanding to action*

7 Ceres (2025). New Ceres' report shows the staggering financial repercussions of nature loss.

8 Thomas, R., Davies, J., King, C., Kruse, J., Schauer, M., Bisom, N., Tsegai, D., Madani, K., 2024. *Economics of Drought: Investing in Nature-Based Solutions for Drought Resilience – Proaction Pays*. A joint report by UNCCD, ELD Initiative and UNU-INWEH, Bonn, Germany; Toronto, Canada.

9 PWC (2023) *Managing nature risks: From understanding to action*

10 The Taskforce on Nature-related Financial Disclosures (TNFD) is a global, market-led initiative founded by Global Canopy, UNDP, UNEP FI and WWF. It formally launched in June 2021 and published its final recommendations in September 2023. As of November 2025, over 733 organisations across 56 countries had committed to TNFD-aligned disclosure, representing US$22.4 trillion in assets under management.

11 TNFD (N.D.) *TNFD Adopters*.

12 IFRS (2026) *ISSB agrees on the proposed way forward for nature-related disclosures*

The implementation of the EU's CSRD, which sets out disclosure requirements though European Sustainability Reporting Standards (ESRS), is, as of 2026, now pending.[13] The ESRS is closely aligned to the TNFD recommendations and covers nature-related topics such as water and marine resources, biodiversity and ecosystems. From January 2026, organisations reporting "in accordance with the Global Reporting Initiative (GRI)", must use the updated GRI biodiversity standard 101, which more closely aligns with TNFD framework.

> *The Carbon Disposure Project (CDP) questionnaire has evolved into a key source of nature-related company data, expanding beyond its original focus on climate to cover areas such as water, forests, biodiversity, plastics, and oceans. Since 2024, it has shifted from separate questionnaires to a single integrated framework aligned with major reporting standards, improving the coherence and comparability of environmental disclosures.*[14]

About this report

This report provides an update on nature-related disclosure practice since the 2023 analysis. It also explores the state of the nature-related data ecosystem from the perspective of key stakeholders and explores how investors are engaging in nature-related collaborative initiatives.

The following research questions are addressed:

1. To what extent do nature-related disclosures by firms align with the TNFD reporting requirements and how has this changed since the 2023 analysis?
2. What is the quality of firm disclosures on nature in 2026?
3. To what extent do company nature disclosures align with the most material issues for the sector?
4. What are the disclosure trends?
5. What can be learned from disclosure practice in Japan as a TNFD adoption leader?
6. What new approaches are developing in the nature-related data provider space and what are the challenges in this space?
7. What are the aims and outcomes of nature-related investor collaborative engagements and what is the investor experience of these engagements?

13 As reported by Reuters Journalists Kate Abnett and Julia Payne, the EU has faced significant corporate lobbying, which has resulted in the stalling and watering down of the ESRS, amidst fears requirements will weaken the investment climate in Europe (***Reuters,*** 2025)

14 CDP (2025) *Corporate Disclosure Key Changes for 2025*

Value Added to Investors

This report aims to support investors by:

1. Deepening investors' understanding of evolving nature-related disclosure practices and nature-related data provision.
2. Supporting understanding of how investors can use TNFD disclosures to interpret and understand nature-related dependencies, impacts, risks, and opportunities.
3. Supporting investor engagement with firms on nature-related issues by:
   - identifying potential sectoral disclosure strengths and gaps
   - providing a disclosure reference benchmark
   - identifying potential company engagement points
   - highlighting collaborative engagement opportunities.
4. Providing insights on the nature data ecosystem and collaborative nature initiatives.
5. Situating near-term disclosure and engagement practice within the longer-term shifts in portfolio construction and investor governance that our findings suggest lie ahead.



Photo: iStock

2 Method



Photo: iStock

Company sample selection

The analysis covers 19 firms across 14 countries and eight priority sectors (two companies per sector).

Sixteen firms were from the 2023 analysis (two per TNFD priority sector), selected for their economic and geographic diversity, and enabling year-on-year comparison. Three additional Japanese firms were included to spotlight Japan as the country with the largest reported number of TNFD adopters as of November 2025. Together, these companies provide a geographically and economically diverse benchmark of advanced disclosure practice. In selecting the companies for this analysis, three criteria were used:

Geography	Sector	Environmental Performance
Economically & Geographically Diverse	Two firms from each of eight TNFD priority sectors (SASB SICS classification)[15]	Strong environmental performance according to existing benchmarks and ratings

1	**Geographic & Economic diversity**	In addition to a geographically diverse cohort of companies (by headquarters), we also aimed to include companies from diverse economic contexts. In total the sample includes 15 firms from advanced economies.
2	**Sector**	Companies were also selected based on their categorisation under the eight priority sectors identified by the TNFD, which draws from the SASB Sustainable Industry Classification System (SICS).[16] These sectors include: • **Health Care** (inc. pharmaceuticals, and medical equipment manufacturing) • **Infrastructure** (inc. real estate, real estate services, utilities, and engineering) • **Renewable Resources & Alternative Energy** (inc. forestry and timber operations) • **Resource Transformation** (inc. chemical and fertiliser manufacturing) • **Transport** (inc. marine transportation & cargo shipping) • **Consumer Goods** (inc. apparel, textiles, and fast-moving consumer goods) • **Extractives & Minerals Processing** (inc. metals & mining) • **Food & Beverage** (inc. processed foods, meat, poultry and dairy)
3	**Environmental performance**	To set a strong disclosure benchmark for companies and investors, we targeted companies known to have a strong environmental performance according to existing benchmarks and rankings, including the Nature Benchmark (World Benchmarking Alliance), ESG Policy Transparency Analysis (SPOTT), and ESG Peer Analysis (LSEG–Refinitiv).

15 Note that many companies in the sample are highly diversified, operating complex supply chains with overlapping product and service offerings. Each company was consequently assigned to a sector based on self-identified classification. Where the SICS sector could not be determined based on self-identification alone, we considered the % revenue derived from a product or service category. If 60% or more of the company's revenue was derived from food & beverage, then the company was classified as food and beverage, if 60% or more was derived from household and consumer goods items, then the company was classified under consumer goods, and so on. In rare cases where a company owned a portfolio of business operations and subsidiaries, we analysed only the disclosures from the target operations or subsidiary, for example, the 'Chemicals' division of a diversified parent company.

16 Due to the broad possible range of companies and offerings in each sector, we narrowed the within sector focus. Specific within sector focus described in brackets.

Company disclosure analysis

Over 1,000 documents across the 19 companies were reviewed with AI assistance, including annual and sustainability reports, TNFD and Taskforce for Climate-related Financial Disclosure (TCFD) reports, policies, and current webpages. Approximately 830 documents were included in the final analysis. Documents were downloaded between November 2025 and February 2026, with a final check in February 2026 to capture the latest annual and sustainability reporting. Disclosures were assessed against three criteria: alignment with TNFD recommendations; alignment with material drivers of nature loss for the sector; and quality according to established disclosure principles (specificity, recency, traceability, and coverage of the full identify-assess-manage-monitor cycle).

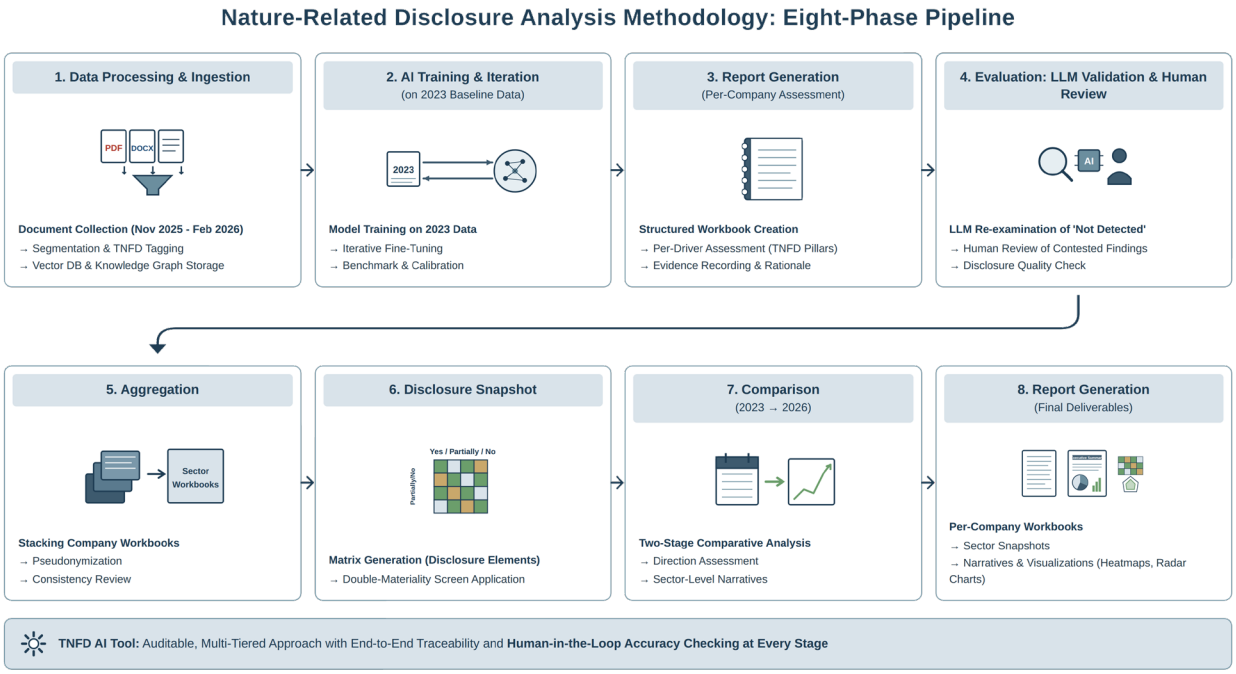


Figure: The above figure describes the eight-phase process undertaken to complete the comparative disclosure analysis using a Large Language Model (LLM).

A purpose-built TNFD AI tool extracted and coded data through an eight-phase pipeline, where each phase produces an auditable output that serves as an input into the next (see figure above). These phases are:

1. **Data processing and ingestion.** Documents were ‘chunked’, classified against the TNFD taxonomy, and stored in a vector database and knowledge graph for retrieval.

AI training and iteration. The LLM prompts and 2. underlying coding infrastructure underpinning the document analysis was tested and refined iteratively using the data from the 2023 report.

3. **Per-company assessment.** The tool produced a structured workbook recording a verdict, evidence quote, and rationale for every TNFD recommendation.
4. **LLM validation and human review.** “Not Detected” findings were re-examined across three large language model (LLM) iterations; contested findings were escalated to human analyst review.
5. **Aggregation.** Company workbooks were combined into per-sector workbooks using anonymised pseudonyms to focus comparison on disclosure substance.
6. **Disclosure snapshot.** Per-sector workbooks were distilled into a verdict matrix, with a double-materiality screen applied to prioritise gaps on material drivers.
7. **Comparison (2023 → 2026).** Cell-level changes were assessed for direction and magnitude, then synthesised into sector narratives weighted towards material drivers.
8. **Final deliverables.** Outputs include per-company workbooks, per-sector snapshots, and sector narratives with visualisations, each fully traceable to source documents.

Current disclosure data was compared to results from the 2023 analysis to identify whether and how disclosure has changed.

Data provision and collaborative engagement

A desktop review was undertaken to identify nature-related collaborative engagements and recent developments in nature-related data provision.

Interviews were conducted with a small sample of 6 nature-related data providers and investors who both use nature-related data and are involved in at least one nature-related collaborative engagement. Interview inputs were aggregated and analysed to identify common themes and areas of divergent perspectives.

Limitations of the research

This research provides a benchmark of nature-related disclosures by companies considered to be sustainability leaders in their sectors. As such, findings represent the upper boundary of current disclosure practice rather than the broader market. Sectoral insights and phrases such as 'sector-wide' refer only to companies included in the research and are not intended to be representative of the broader sector.

The analysis relies on publicly available disclosures, which may not fully reflect internal practices or the effectiveness of companies' risk management. The research assesses the extent and quality of disclosure rather than real-world outcomes, and therefore cannot determine whether reported practices are translating into measurable environmental improvements.

> *Given the relatively short time horizon of comparison and the rapidly evolving nature of the field, findings should be understood as indicative of emerging trends rather than stable, long-term practices.*

AI limitations note

The bespoke AI tool used to extract and code data inherits a set of limitations characteristic of language-model-based analysis. Retrieval and classification are imperfect: a disclosure that uses unusual phrasing, is fragmented across multiple sections of a document, or appears within complex tables and figures may be under-weighted by the retrieval system. In response, "Not Detected" findings were re-examined by a three-iteration language-model verifier and, where contested, manually reviewed against the source document. Residual under-detection cannot be entirely ruled out, particularly for disclosures expressed obliquely or scattered across multiple documents.

Language models also display residual variance in borderline judgements. For example, on whether a partial disclosure crosses the threshold to a full "Yes", or how a hedged commitment ought to be scored. The pipeline was tuned against a ground-truth-coded reference sample and run at deterministic settings to minimise such variance, but the boundary between "Yes" and "Partially" should be understood as a calibrated rather than an absolute distinction.

3 State of Nature-related Disclosures by Sector



Photo: iStock

In this section, we present the results of our 2026 nature-related disclosure analysis. Using our 2023 findings as a baseline, we assess how the companies in each sector have progressed, regressed, or remained unchanged against each of the 93 disclosure elements included in our framework.

Sectoral overviews

The next section of the report provides a deep dive on each of the 8 priority TNFD sectors, including:

1. Extractives & Minerals Processing (n = 2)
2. Consumer Goods (n = 2)
3. Food & Beverage (n = 2)
4. Health Care (n = 2)
5. Resource Transformation (n = 2)
6. Transportation (Marine) (n = 2)
7. Infrastructure (n = 2)
8. Renewable Resources & Alternative Energy (n = 2)

Sectoral analysis

We present a summary of disclosure and material issues, including changes in disclosure since 2023.

Each sector deep dive includes:

- A sector overview summarising pillar level progress since 2023
- A materiality snapshot, showing progress since 2023
- A disclosure quality statement, taking into consideration specificity, understandability, relevance, and independent verification. See Appendix A – Disclosure quality analysis for more information on this part of the analysis
- The disclosure analysis, summarising key insights at the pillar level, and proposing key areas for investor engagement based on the gaps, and areas for improvement identified

Disclosure Progress Snapshots (Sample, Sector & Pillar Level)

Disclosure progress snapshots across all levels were calculated by summing the total number of disclosure elements for which each company recorded a 'yes' for disclosures present for a given element, 'partial' for disclosure elements partially satisfied, or 'no' where disclosures were absent for that element.

Total yes, no, and partial tallies were then compared for change between 2023–2026. The %'s recorded in the stacked bar charts across this section represent the **proportion of total disclosure elements for which disclosure coverage improved (No → Yes, or Partial → Yes), regressed (Yes → No, Partial → No), or remained unchanged (Yes → Yes, or Partial → Partial), or where there was a 'remaining gap' (No → No).** The same methodology has been applied at the pillar level for each sector analysis.

TNFD Core Disclosure Recommendations

Company disclosures were assessed against the 14 core disclosure recommendations articulated by the TNFD.

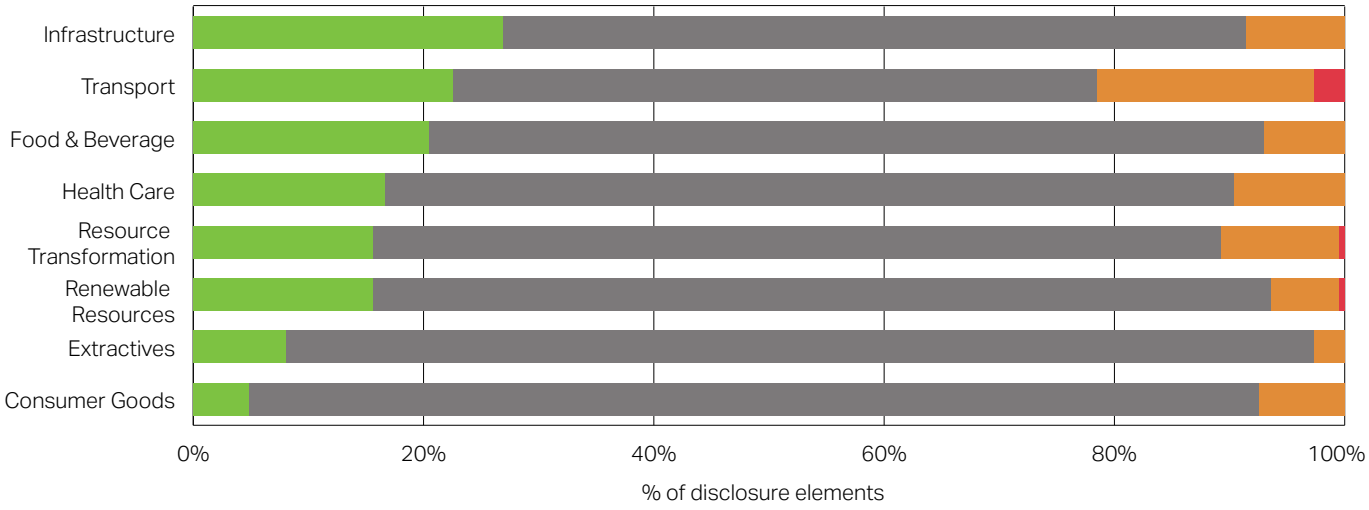
Each core recommendation was further sub-divided into a set of key disclosure elements. In total, 93 disclosure elements were included in the assessment framework. The results of the analysis included in this 2026 report reflect the overarching insights derived at the pillar and sector level, with special attention paid to areas of progress, persistent gaps and regressions in disclosure coverage recorded between 2023–2026.

Description of TNFD Core Recommendations

Governance	Strategy	Risk Management	Metrics & Targets
A Describe the board's oversight of nature-related dependencies, impacts, risks, and opportunities.	A Describe the nature-related dependencies, impacts, risks, and opportunities the organisation has identified over the short, medium, and long term.	Ai Describe the organisation's processes for identifying, assessing, and prioritising nature-related impacts, dependencies, risks, and opportunities in its direct operations.	A Disclose the metrics used by the organisation to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process.
B Describe management's role in assessing and managing nature-related dependencies, impacts, risks, and opportunities.	B Describe the effect that nature-related dependencies, impacts, risks, and opportunities have had on the organisation's business model, value chain, strategy, and financial planning, as well as any transition plans or analysis in place.	Aii Describe the organisation's processes for identifying, assessing, and prioritising nature-related dependencies, impacts, and opportunities in its upstream and downstream value chain(s).	B Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature.
C Describe the organisation's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organisation's assessment of, and response to, nature-related dependencies, impacts, risks, and opportunities.	C Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios.	B Describe the organisation's processes for managing nature-related dependencies, impacts, risks, and opportunities.	C Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, and opportunities and its performance against these.
	D Disclose the locations of assets and/or activities in the organisation's direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations.	C Describe how processes for identifying, assessing, prioritising, and monitoring nature-related risks are integrated into and inform the organisation's overall risk management processes.	

2023–2026 Progress Snapshot

Disclosure Progress by Sector 2023–2026



Direction of change 2023–2026: Progressed | Unchanged | Remaining Gap | Regressed



Photo: iStock

2023–2026 Cross Sector Insights

Overall, the breadth and depth of nature disclosures increased markedly between 2023 and 2026.[17]

All companies now explicitly reference the TNFD, nature risk assessments are more rigorous and spatially specific, and many are now setting formal no net loss, net gain, or nature positive targets, with nature scenario analysis now starting to be integrated with climate change. Below are statistics highlighting % progress in key disclosure areas assessed.



↑63%

LEAP Adoption[18]

6% → 69% of companies



↑62%

TNFD Framework Referenced

38% → 100% referencing framework



↑56%

NNL / Net Gain / NPI Target

25% → 81% of companies



↑50%

Priority Locations Mapped

38% → 81% of companies



↑32%

Double Materiality Reported

62% → 94% of companies



↑31%

Nature Scenario Analysis

0% → 31% of companies

17 Japanese company additions have been excluded from these statistics.

18 LEAP refers to the integrated approach for the assessment of nature-related issues developed by the TNFD called the LEAP approach, or 'LEAP' for short (Locate, Evaluate, Assess and Prepare) (TNFD, 2023).

Examples of leading practice in areas relevant to the TNFD 2026

Encouragingly, we observe meaningful progress across several of the TNFD pillars since the 2023 analysis.

Companies in our sample are now moving beyond enhancing disclosure coverage toward practices that treat nature as a core input to strategy and capital allocation. Examples observed across this year's assessment include:

1	**Location-specific assessment**	Asset- and site-level GIS mapping of direct operations and supply chains against biodiversity databases, rather than country- or sector-level desktop screening.
2	**Double materiality**	Formal, scored assessment of both impact and financial materiality, calibrated with stakeholders and aligned to existing enterprise risk frameworks (e.g. under CSRD/ESRS).
3	**Scenario analysis**	Nature modelled as a distinct system with its own tipping points, tested across near-, medium- and long-term horizons rather than folded into climate scenarios alone.
4	**Financial relevance**	Nature-related risk translated into board-ready financial metrics: revenue-at-risk, capital-at-risk and multi-year discounted cash flow impacts.
5	**Strategic integration**	Nature transition treated as a capital allocation decision, backed by dedicated CAPEX and investment strategy, not managed as a standalone reporting exercise.
6	**Transition planning**	Nature targets embedded directly in segment-level growth plans and executive remuneration, with ring-fenced funding to support implementation.



Photo: iStock



Extractives and Minerals Disclosure Analysis

Disclosure coverage in this sector is broad and continuing to develop. In 2026 both companies report against almost every TNFD element, having closed most of the gaps visible in 2023.

Beneath the near complete disclosure, we find escalating nature-related threats and mounting realised financial liabilities, including multi-billion-dollar reparations for a tailings dam failure, environmental fines (of over US $100 million) relating to aquifer extraction, multi hundred million-dollar provisions for dam de-characterisation, and asset impairments.

Materiality Snapshot

	**Land/Water/ Ocean Use Change**	• Terrestrial (habitat removal and fragmentation) • Water use change (dam containment failures, structural changes to watercourses)	**Progressed**
	**Resource Exploitation**	• Water use—across cooling, dust suppression, leaching and processing • Groundwater dependent vegetation impacts • Water risk in basins under high or critical stress affecting production and revenue.	**Progressed**
	**Climate Change**	• Greenhouse gas (GHG) emissions (energy intensive extraction and smelting • Physical and transition risk	**Unchanged**
	**Pollution**	• Non-GHG air pollutants • Solid waste (tailings) • Water pollutants (acid mine drainage) • Soil pollution.	**Remaining Gap**
	**Invasives & Other (Disturbances)**	• Disturbances (lasting noise and vibration driven species displacement) • Biological alterations/interferences (habitat fragmentation)	**Remaining Gap**

Disclosure Quality Statement

Companies in this sector obtain external assurance over portions of their sustainability disclosures (GRI-aligned, with selected metrics subject to limited assurance), but pollution and biodiversity metric assurance remains narrower than for climate. Reporting is consistent across annual reports, sustainability reports, CDP responses and sustainability-related portals, supported by multi-year sustainability-related data-books and maps of operations against water stress and biodiversity priority areas.

Guidance for investors in Extractives & Minerals

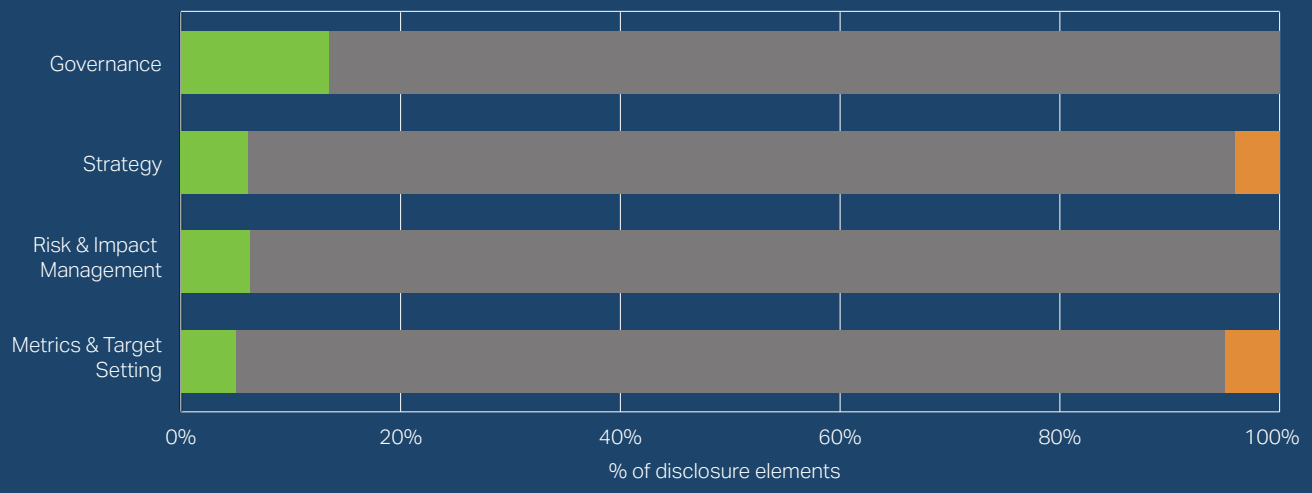
The following points reflect the issues identified as most relevant to the companies in the disclosure analysis and illustrative examples of good practice. Not all issues will apply to every company.[19] For investors whose mandates include stewardship or the assessment of nature-related risks and impacts, the following issues may provide useful starting points for company-specific engagement. Their relevance will depend on the company's activities, locations and risk profile, as well as the investor's mandate and investment approach. Where a company has not identified an issue that peers in the sector consider material, this omission may itself be a useful starting point for engagement.

Based on our analysis of disclosure progress and gaps, investors can engage companies in this sector on:

- Why fines, controversies and reparation costs reported are increasing despite comprehensive management plans in place. **Illustrative Practice:** Disclosing root-cause analyses of compliance failures and remediation expenditure.
- The multi-year cost trajectory of tailings and dam-safety programmes and how this exposure is being provisioned, given that some of the sector's largest liabilities arise here. **Illustrative Practice:** Publishing long-term capital expenditure and closure provisioning models aligned with the Global Industry Standard on Tailings Management (GISTM), detailing site-specific remediation liabilities and engineering retrofits.
- Gaps in reporting on absolute, multi-year non-GHG air pollutant figures and the framing of locally material pollutants as immaterial. **Illustrative Practice:** Disclosing multi-year, site-level absolute emissions data for heavy metals, sulfur dioxide (SO_2), and particulate matter (PM), regardless of consolidated group materiality thresholds.
- Evidence that habitat restoration and water-reduction targets are being met at the most water-stressed sites, and on how risks to permitting and other related regulatory risk is managed and priced. **Illustrative Practice:** Providing audited progress reports on progressive land rehabilitation and site-specific freshwater extraction reductions in high-stress basins, backed by financial stress-testing against tightening water allocation permits.
- Whether human rights and consultation governance is translating into outcomes for affected communities, given the scale of compensation the sector has paid for realised harm. **Illustrative Practice:** Demonstrating independent monitoring of community grievance resolution rates, binding FPIC compliance metrics, and transparent tracking of zero-harm outcome indicators across all active concessions

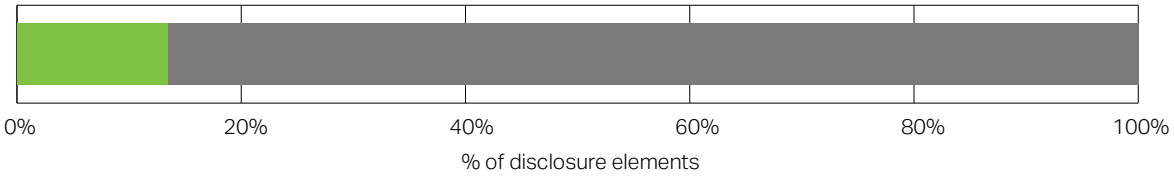
19 The following points are illustrative considerations derived from the disclosures of the companies included in this study. They are not intended to prescribe a particular investment or stewardship approach. Their relevance will vary according to the investor's mandate, investment horizon, asset class, stewardship strategy and legal obligations, as well as the company's activities, location and materiality assessment.

Extractives and Minerals Disclosure Progress by Pillar 2023–2026



Extractives and Minerals

Governance 2023–2026



Progressed

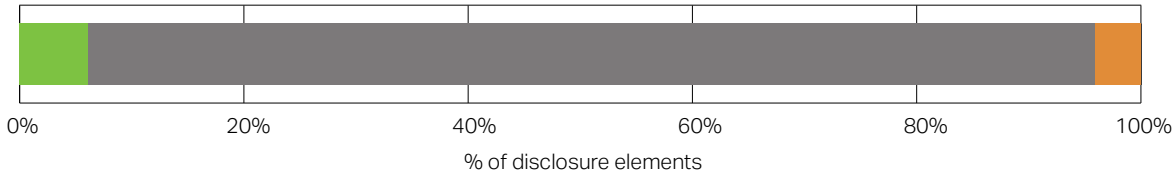
Board oversight of nature performance objectives, accountability, reporting structure, board nature competence, and a commitment to the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises now detected for both companies, indicating improved governance and oversight of nature-related issues.

Unchanged

Disclosures indicate nature is governed through board-level sustainability committees in both years, with comprehensive human rights governance anchored in the United Nations (UN) Guiding Principles, the UN Declaration on the Rights of Indigenous Peoples, International Council on Mining and Metals (ICMM) membership, grievance mechanisms and Free Prior and Informed consent (FPIC) processes disclosed throughout.

Extractives and Minerals

Strategy 2023–2026



Progressed

Both companies moved from largely absent locational disclosure in 2023 to disclosing areas of high ecosystem integrity or decline, other priority locations (including those important to Indigenous Peoples), and published lists or maps of priority assets by 2026.

Unchanged

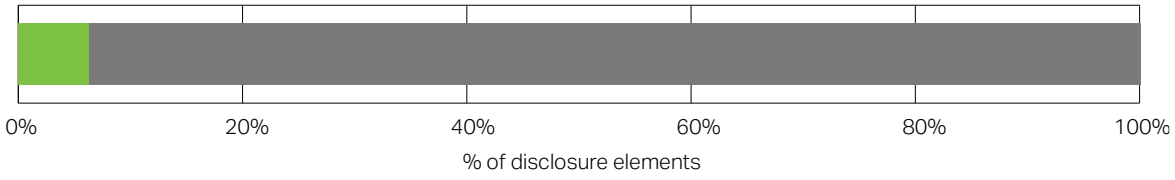
Both companies disclosed climate scenario analysis, business-resilience assessment and climate transition plans in both years. Operationally detailed impact identification across every material driver, e.g., habitat loss, geotechnical and tailings instability, acid mine drainage, aquifer depletion, species displacement, was comprehensive throughout.

Remaining Gap

Specific invasive species management practices remain limited, and one company carries no policies or management practices for biological alterations, but this pressure is considered less material than the disturbances, which are disclosed.

Extractives and Minerals

Risk & Impact Management 2023–2026



Progressed

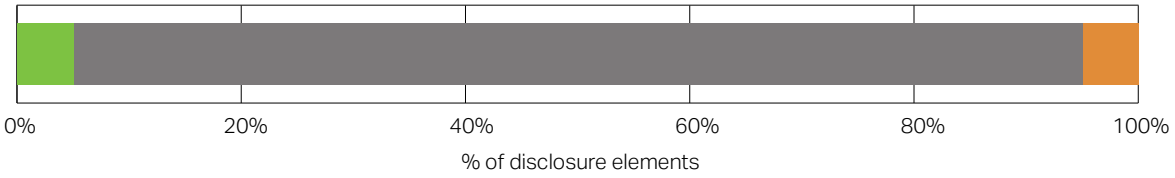
Both companies now adopt double materiality, and one has broadened its pollution risk assessments. Both now assess all five material driver categories within their enterprise risk management frameworks.

Unchanged

Tailings and dam safety risk was embedded in risk frameworks for both companies, which is expected given the scale of liability involved. Nature and overall risk-management processes were disclosed in both years.

Extractives and Minerals

Metrics & Target Setting 2023–2026



Progressed

Quantified pollution-related and water-intensity targets increased between 2023-2026 and both companies now disclose dated, baselined climate and nature targets.

Unchanged

Both companies disclosed science-based, Paris-aligned climate targets against absolute baselines in both years and net zero by 2050. Substantive nature targets, including restoration, freshwater reduction, United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage avoidance, no disposal of tailings to water bodies, were also detected.

Quantified pollution-reduction targets are disclosed by one company only. The other relies on air-quality management processes rather than quantified particulate, sulphur and nitrogen oxide reduction targets, recorded overall as unchanged at the sector level.

Remaining Gap

One company is still yet to set targets related to invasive species, including biological alternations and species disturbances.

Consumer Goods Disclosure Analysis

Between 2023 and 2026 sector disclosure consolidated from an already strong base.

Both companies maintained Science Based Targets initiative (SBTi) validated climate targets across Scopes 1, 2 and 3 emissions, brought agricultural supply-chain emissions into the validated set through SBTi Forest, Land and Agriculture (FLAG) emissions targets, and formalised double materiality to CSRD/ESRS standard. Spatial disclosure advanced using the Science Based Targets Network (SBTN) water layers and the WWF Water Risk Filter, and chemical management is now Zero Discharge of Hazardous Chemicals (ZDHC) aligned.

Materiality snapshot

Land/Water/ Ocean Use Change	• Terrestrial (deforestation/ conversion risk in palm, cotton, leather, soy) • Freshwater use change from manufacturing & agriculture.	**Progressed**
Resource Exploitation	• Water use (water intensive manufacturing and sourcing, input cost exposure in water stressed basins) • Other resource exploitation material (reliance on cotton and non-renewable inputs).	**Progressed**
Climate Change	• Agricultural and use phase inputs dominate the value chain footprint; • Transition and input-cost exposure.	**Progressed**
Pollution	• Soil pollutants rated high (agrochemicals) • Non-GHG air pollutants • Water pollutants (chemical discharge in dyeing/tanning • Solid waste (packaging, microplastics).	**Remaining Gap**
Invasives & Other (Disturbances)	• Disturbances (noise, light)	**Remaining Gap**

Disclosure Quality Statement

Companies in this sector obtain external assurance over portions of their sustainability disclosures (GRI-aligned, with operational energy, GHG emissions and manufacturing-wastewater metrics subject to limited assurance, and CSRD/ESRS reporting detected by 2026). Assurance covers operational metrics rather than the upstream FLAG Scope 3 emissions, regenerative-agriculture and supply chain pollution data, meaning assurance is narrower in an area material to companies in this sector and their investors. Reporting is consistent across annual reports, sustainability reports, CDP responses and sustainability-related portals, though baseline year and scope variation across targets. operational and Scope 3 targets undercuts comparability. Disclosure is specific on climate, land and water, while quantitative non-GHG air-pollutant and soil-pollutant metrics remain absent.

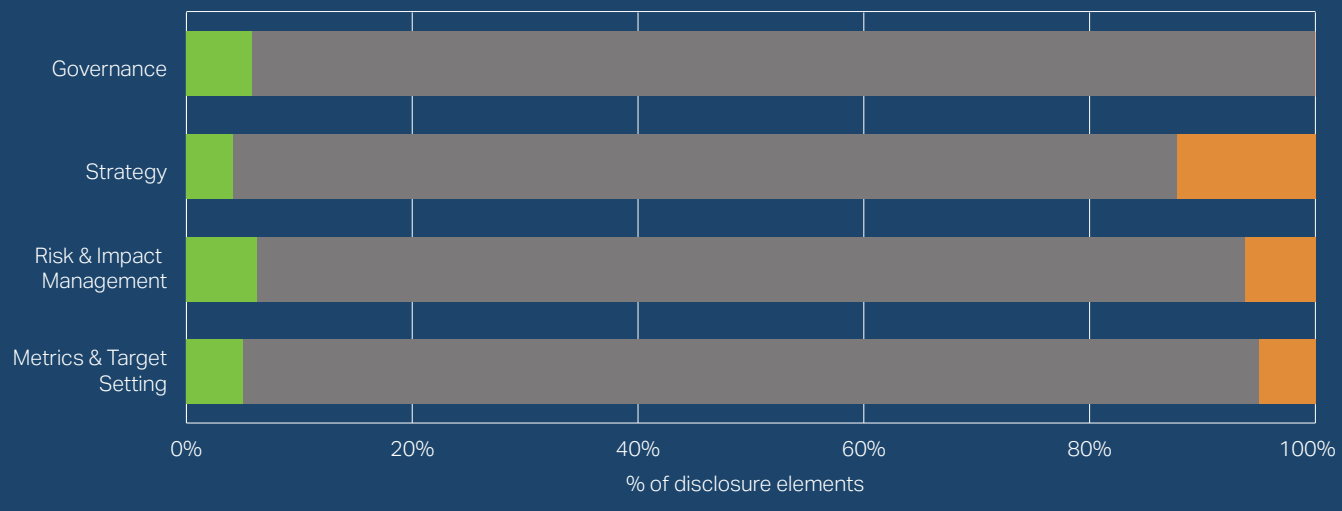
Guidance for investors in Consumer Goods

The following points reflect the issues identified as most relevant to the companies in the disclosure analysis and illustrative examples of good practice. Not all issues will apply to every company. For investors whose mandates include stewardship or the assessment of nature-related risks and impacts, the following issues may provide useful starting points for company-specific engagement. Their relevance will depend on the company's activities, locations and risk profile, as well as the investor's mandate and investment approach. Where a company has not identified an issue that peers in the sector consider material, this omission may itself be a useful starting point for engagement.

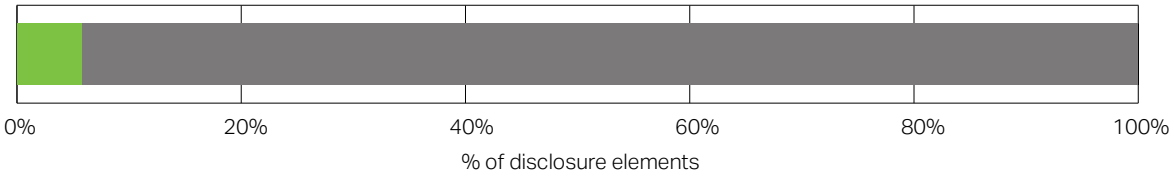
Based on our analysis of disclosure progress and gaps, investors can engage companies in this sector on:

- Evidence that deforestation-free sourcing is being delivered and verified deep into the agricultural supply chain, not just that commitments have been made. **Illustrative Practice:** Disclosing spatial traceability metrics combined with third-party verification frameworks.
- The absence of measurable dated water targets in named priority basins. **Illustrative Practice:** Setting site-specific, volumetric water stewardship targets in identified high-water-risk catchments, informed by local context.
- Plans to introduce quantified reduction trajectories for chemical, microplastic and packaging pollutants. These are measured but not yet managed through targets. **Illustrative Practice:** Publishing time-bound roadmaps detailing baseline inventories, key milestone metrics, and material conversion pathways, including e.g. explicit targets to eliminate intentionally added microplastics, and targets for absolute virgin plastic reduction.
- Enhancing disclosure on financial impacts, both current and projected, arising due to nature-related impacts, dependencies, and opportunities. Current disclosure reveals US $billions of potential long-term revenue at risk, particularly from climate-related risk, dwarfing the financial impact of fines (under US $20k). **Illustrative Practice:** Providing scenario-based quantitative estimates such as reporting revenue at risk valuations contrasted against operational spending, capital expenditures, or compliance costs.
- The lack of quality assurance of upstream supply-chain data where the sector's material impacts concentrate, since this is currently the least covered by assurance. **Illustrative Practice:** Obtaining independent assurance over primary Tier 1 to Tier 3 impact data rather than relying solely on secondary sector averages (e.g., verified supplier audits for water intensity and land conversion).
- Outcomes of engagement with indigenous peoples and local communities, including community benefit sharing schemes. **Illustrative Practice:** Reporting explicitly on the formal implementation of FPIC protocols within supply chain sourcing policies—move beyond narrative statements to highlight co-designed community governance models, grievance resolution metrics, and financial outcomes from community benefit-sharing agreements.

Consumer Goods Disclosure Progress by Pillar 2023–2026



Consumer Goods
Governance 2023–2026



Progressed

Board oversight of progress against nature goals and human-rights risk assessment moved from partial to fully disclosed for one company. Annual risk mapping is now integrated with the double materiality process, and community engagement moved from partial to disclosed for one company.

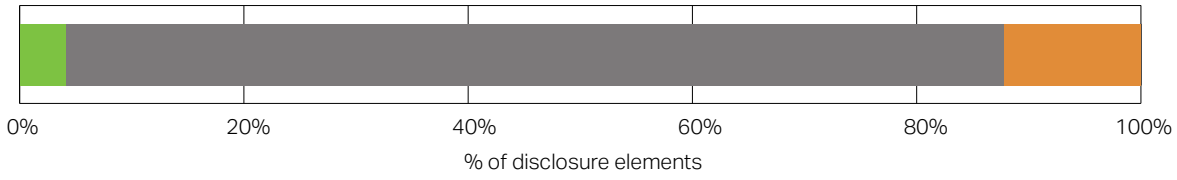
Unchanged

Comprehensive Human Rights Policies aligned to the UN Guiding Principles, OECD Multinational Enterprises (MNE) Guidelines commitments, and FPIC for Indigenous Peoples and Local Communities were detected throughout, alongside multi-stakeholder participation (Consumer Goods Forum, Forest Positive Coalition, Tropical Forest Alliance), maintained at both companies.

Unchanged

Board competence on environmental issues is supported by explicit director training (TCFD, SBTi) at one company only, but in both cases, the specific nature competencies of the board are partially described, as was the case in 2023.

Consumer Goods
Strategy 2023–2026



Progressed

Spatial disclosure is the clearest Strategy improvement. Disclosures now detect areas important to biodiversity, areas of high-water risk and locations important to Indigenous Peoples. Maps of priority locations are published, anchored on ten priority water basins identified using the SBTN Unified State of Nature water layers (drawing on World Resources Institute (WRI) Aqueduct and the WWF Water Risk Filter).

Unchanged

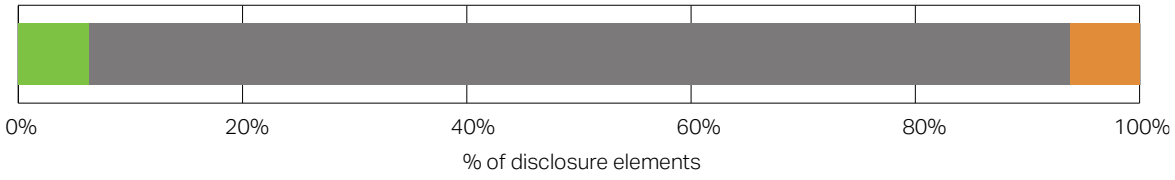
Both companies disclosed comprehensive land-use management practices in both years, including zero deforestation and ecosystem conversion policies aligned to SBTN for high-risk commodities (palm, leather, cotton, soy). Commodity traceability extended toward upstream tiers and smallholders, and regenerative-agriculture programmes continue to maintain large-scale coverage across supplier landscapes.

Remaining Gap

Disturbance-specific management (noise & light) is not detected at either company. Biological alterations management is thin, consistent with that sub-pressure's immateriality, with integrated pest management and habitat/regenerative landscape commitments being the most closely related disclosures.

Consumer Goods

Risk & Impact Management 2023–2026



Progressed

Nature risk management matured at both companies. SBTN pilot participation for hydro basin level pressure on nature assessment and natural capital accounting (an Environmental Profit and Loss approach) to monetise value-chain impacts detected. A first-time quantitative nature scenario analysis (high degradation and high preservation pathways) using the TNFD LEAP approach and Integrated Biodiversity Assessment Tool (IBAT) to quantify packaging linked nature risk was also detected.

Unchanged

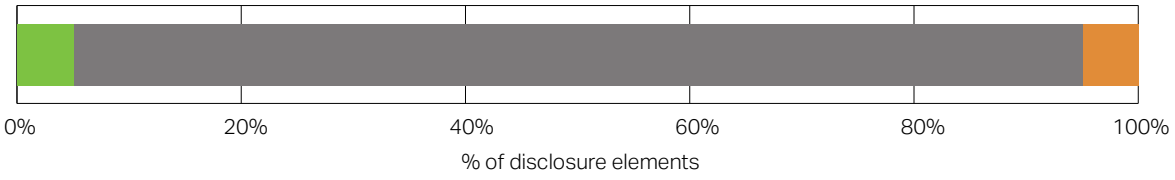
Both companies maintained biodiversity and land-use risk assessments across operations and value chain in both years, mapping against high value, protected and sensitive areas using IBAT, WRI Aqueduct, the WWF Water Risk Filter and the Water Footprint Network tool.

Remaining Gap

Disturbance-specific risk assessment not detected at either company, consistent with 2023.

Consumer Goods

Metrics & Target Setting 2023–2026



Progressed

2026 saw the addition of SBTi-validated FLAG Scope 3 emissions targets addressing the agricultural supply chain emissions that dominate the sector footprint. Water target setting advanced to basin-specific targets in named priority basins (identified using SBTN water layers), with a Net Water Positive ambition were also detected, and chemical target-setting was made explicitly ZDHC aligned at one company.

Unchanged

Both companies disclose substantial habitat and land-use metrics in both years, including the protection of around a million hectares of habitat and regeneration across sourcing landscapes, with deforestation-free sourcing also reported in both years.

Remaining Gap

Quantitative non-GHG air pollutant targets are not detected at either company despite materiality, consistent with 2023.



Food and Beverage Disclosure Analysis

Disclosure was strong in 2023 and strengthened materially by 2026, with the largest gains in governance elements and spatial assessment.

One company adopted the TNFD LEAP approach, implemented a dedicated board sustainability committee and made explicit FPIC commitments. Deforestation free sourcing and framework aligned water and packaging targets are also now in place. Quantitative progress made towards addressing upstream agricultural impacts are still yet to be disclosed.

Materiality snapshot

Land/Water/ Ocean Use Change	• Terrestrial (land-use change in palm, soy, cocoa, sugar, timber) • Freshwater use change from agriculture & manufacturing	**Progressed**
Resource Exploitation	• Water use material (high freshwater dependency in production and ingredient agriculture; basin-level water stress as an operating-disruption channel). • High risk commodity exploitation	**Progressed**
Climate Change	• GHG emissions (agricultural input and livestock emissions dominate the value chain footprint) • Transition risk & physical risks (input cost exposure).	**Progressed**
Pollution	• Solid waste and water pollutants (effluent, packaging).	**Remaining Gap**
Invasives & Other (Disturbances)	• No material issues	**Unchanged**

Disclosure Quality Statement

Companies in this sector obtain external assurance over portions of their sustainability disclosures, with operational energy, GHG emissions, water and effluent metrics subject to limited assurance and GRI aligned reporting in both years. Assurance covers operations rather than the upstream agricultural Scope 3 emissions and regenerative-agriculture data, meaning assurance is narrower in an area material to companies in this sector and their investors. The material upstream impact is disclosed largely as programmes and spend rather than quantified financial exposure. The principal comparability challenge is the divergence in framework and baseline data, along with an SBTi absolute versus intensity split in climate targets, varying base years, and differing definitions of regenerative agriculture, complicating within and between company comparison.

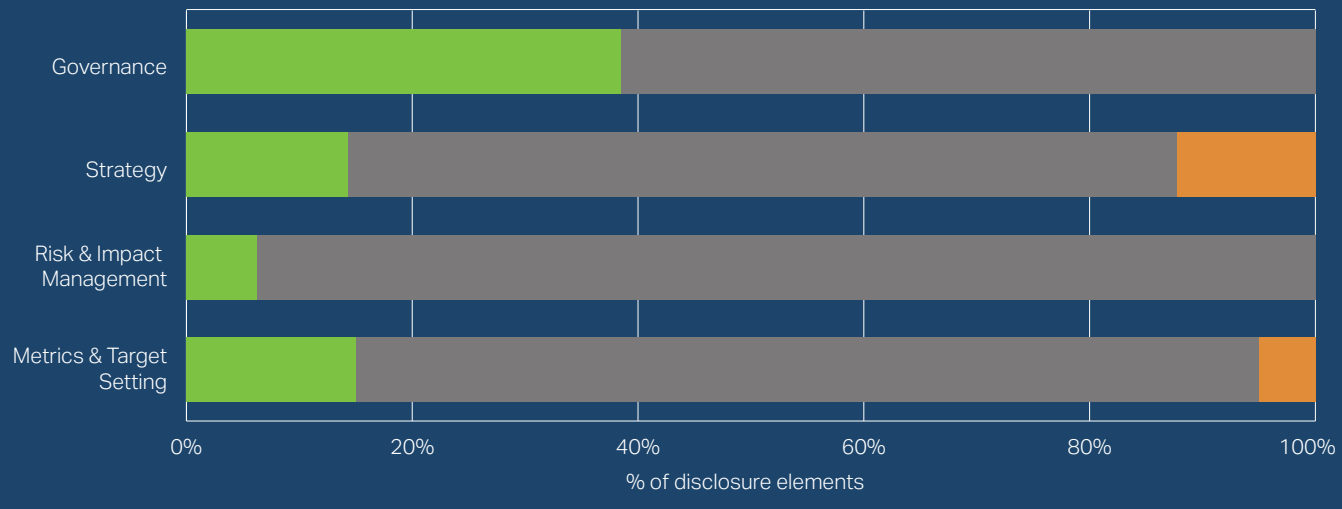
Guidance for Investors in Food & Beverage

The following points reflect the issues identified as most relevant to the companies in the disclosure analysis and illustrative examples of good practice. Not all issues will apply to every company. For investors whose mandates include stewardship or the assessment of nature-related risks and impacts, the following issues may provide useful starting points for company-specific engagement. Their relevance will depend on the company's activities, locations and risk profile, as well as the investor's mandate and investment approach. Where a company has not identified an issue that peers in the sector consider material, this omission may itself be a useful starting point for engagement.

Based on our analysis of disclosure progress and gaps, investors can engage companies in this sector on:

- Plans to introduce absolute, externally validated emissions reduction targets across agricultural supply chains. **Illustrative Practice:** Setting methane and FLAG targets covering Scope 3 upstream emissions, backed by clear verification protocols for land-use change.
- Plans to report on absolute emissions from dairy, livestock and agricultural inputs, including any methane component, against a defensible baseline. **Illustrative Practice:** Disclosing disaggregated greenhouse gas inventories that explicitly break out short-lived climate pollutants (specifically methane) from agricultural operations and enteric fermentation against a fixed, audited baseline year.
- Plans to introduce measurable water-reduction and pollutant-load targets in priority water-stressed basins. In some locations, dairy farming can contribute materially to nutrient loading in affected watersheds. Investors may consider asking how the company evaluates the relevance, coverage and limitations of certification across higher-risk upstream farm networks. **Illustrative Practice:** Disclosing catchment-level targets for nutrient run-off reduction (e.g., nitrogen and phosphorus limits) and establishing third-party certified sustainable farming standards across high-risk upstream dairy and crop supply bases.
- Reporting on absolute virgin plastic volume and packaging weight year on year, rather than recyclability percentages. **Illustrative Practice:** Disclosing total metric tonnage of virgin plastic and overall packaging material used annually, paired with explicit target trajectories for absolute material reduction and scaled reusable/refillable packaging solutions.
- Investments in nature, pushing for increased capital allocation to assist smallholder farmers to transition to more sustainable forms of agriculture. **Illustrative Practice:** Earmarking direct financial mechanism disclosures, such as technical assistance funds or premium pricing structures, to support smallholder adoption of sustainable management practices.
- Evidence that community and Indigenous consultation is changing sourcing decisions, rather than simply confirming the existence of consultation mechanisms. May need to push for enhanced Tier 4 reporting in order to capture community impacts embedded deep in supply chain. **Illustrative Practice:** Providing case-level disclosures showing how FPIC outcomes have directly altered supplier selection or site expansion, supported by deep-supply-chain tracing mechanisms down to primary production levels.

Food and Beverage Disclosure Progress by Pillar 2023–2026



Food and Beverage
Governance 2023–2026



Progressed

Board oversight of nature strengthened markedly for one company. It moved from largely climate framed oversight to a dedicated board level sustainability committee reviewing nature-related strategies, goals and risks regularly, supported by emissions, packaging and water task forces, and TNFD adoption.

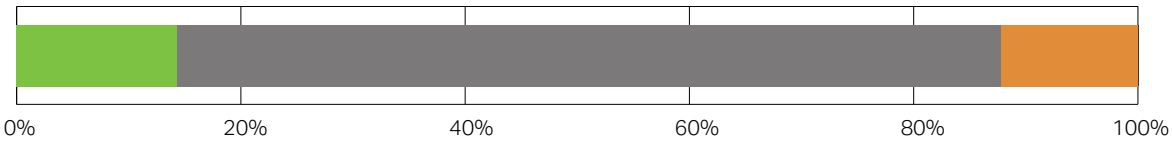
Progressed

TNFD LEAP method to inform board-level nature assessment. Human rights and FPIC disclosure at that same company improved substantially – from largely absent, to disclosure of a human rights risk framework, grievance mechanisms and explicit FPIC commitments for Indigenous Peoples and Local Communities. It moved from partial to full disclosure on executive-remuneration linkage.

Unchanged

Sustainability performance was linked to executive remuneration at both companies across both years, and both maintained stakeholder engagement relevant to nature (consultation with farmers, workers and communities in commodity origins; worker surveys and external advisory input at one company).

Food and Beverage
Strategy 2023–2026



Progressed

Spatial disclosure advanced through improvements to methodology at both companies. One company adopted the TNFD LEAP approach, using the Biodiversity Impact Assessment tool and IBAT to screen selected facilities for proximity to biodiversity sensitive areas within defined radii, and applied the WWF Water Risk Filter across its factories.

Unchanged

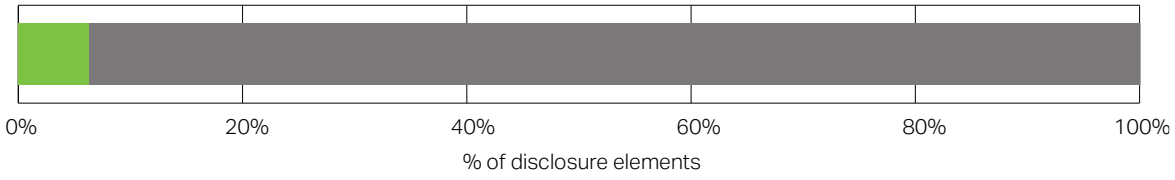
Both companies disclosed deforestation-free sourcing commitments supported by verification tooling rather than certification alone in both years. Satellite monitoring, on the ground High Carbon Stock/ High Conservation Value (HCS/HCV) assessment and field verification alongside Roundtable on Sustainable Palm Oil (RSPO) certification at one company. HCS/HCV methodologies and traceability systems used at the other.

Remaining Gap

Sub-pressure specific management of invasive species and disturbances is limited, consistent with the issues not being material under the sector screen.

Food and Beverage

Risk & Impact Management 2023–2026



Progressed

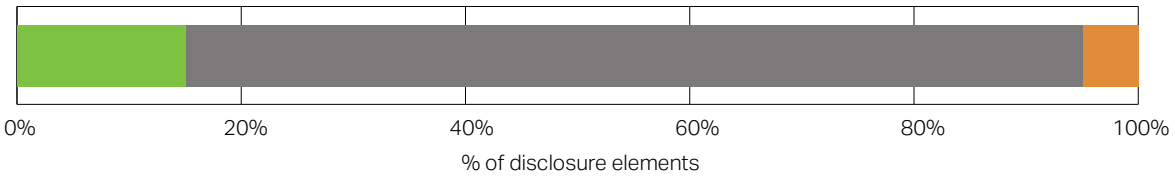
Nature risk assessment matured at both companies. One company adopted the TNFD LEAP approach integrated with enterprise risk management, combined with Biodiversity Impact Assessment, IBAT, and semi-quantitative pasture pollution-source assessments. The other company now applies the Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE) framework, a State of Nature assessment and site-specific assessment services within its annual risk-management process.

Unchanged

Both companies disclosed climate scenario analysis using Intergovernmental Panel on Climate Change (IPCC) and International Energy Agency (IEA) scenarios for physical and transition risks across multi decadal horizons in both years, integrating nature scenarios via TNFD LEAP and academic or third-party partnerships by 2026.

Food and Beverage

Metrics & Target Setting 2023–2026



Progressed

Nature metrics detected at both companies in 2026 (the nature metrics disclosure moved from absent to present at both), and water target setting has advanced from not only reducing total withdrawals to regenerating water basins (putting water back) through specific actions.

Unchanged

Both companies disclosed emissions against targets in both years and Specific Measurable Achievable Relevant and time-bound (SMART) water targets (for example, water intensity per tonne reduction). Both disclosed deforestation free sourcing targets for forest risk commodities and regenerative agriculture and responsible sourcing programmes (agroforestry, biofertiliser use, integrated pest management, crop rotation) throughout.

Remaining Gap

No methane specific or FLAG Scope 3 emissions targets are disclosed at either company despite agricultural and livestock emissions dominating the footprint.

Health Care Disclosure Analysis

Between 2023 and 2026 Health Care disclosure advanced in governance and spatial assessment at both companies, but target quality diverged.

One company quantified and formalised its water, waste and pharmaceutical pollution targets, while the other company's water and nature targets remained non-quantified and non-timebound across both years. The principal residual gaps include quantitative soil pollutant and non-GHG air pollution targets, and uneven coverage regarding outcome-level disclosure of dependencies on natural ecosystems.

Materiality snapshot

Land/Water/ Ocean Use Change	• Terrestrial and marine use—change immaterial at direct level. • Freshwater dependency (addressed under Resource Exploitation).	**Progressed**
Resource Exploitation	• Water is critical and irreplaceable for production and high withdrawals in water-stressed regions a key disruption channel.	**Remaining Gap**
Climate Change	• Energy and cold chain intensive operations and distribution • Transition and physical exposure (labs & water resource impacts)	**Progressed**
Pollution	• Soil, non-GHG air pollutants • Water pollutants (heavy metals, effluent) • Solid waste (plastic waste, single use, biological waste)	**Remaining Gap**
Invasives & Other (Disturbances)	• Biological alterations/interferences (biotech dependency on genetic material) • Disturbances (manufacturing site)	**Remaining Gap**

Disclosure Quality Statement

Companies in this sector obtain external assurance over portions of their sustainability disclosures, with operational energy and water metrics, GHG emissions and selected Health, Safety and Environment (HSE) indicators subject to limited assurance and GRI-aligned reporting in both years. Assurance covers operations but not pharmaceutical pollution, biodiversity management and Scope 3 emissions supplier data, meaning assurance is narrower in areas material to companies in this sector and their investors. The principal comparability problem is divergence in target quality between companies, for example, one set quantified and time-bound targets, the other set qualitative targets and baseline years differ. Disclosure is specific on climate and, at one company, water and pharmaceutical pollution programmes, while soil pollutant and non-GHG air pollution metrics remain absent.

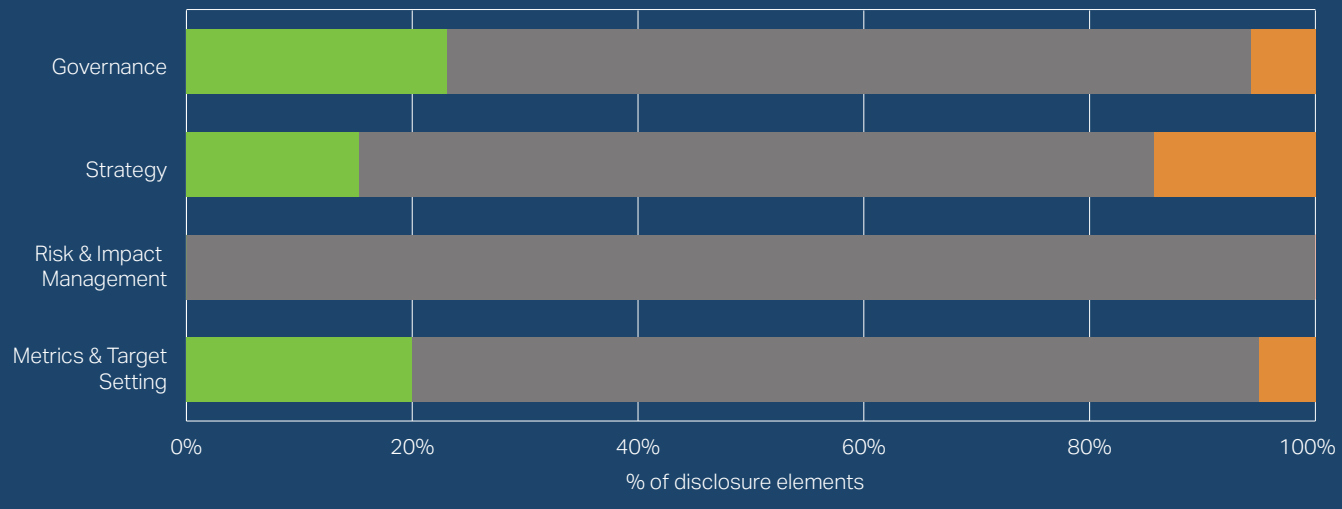
Guidance for Investors in Health Care

The following points reflect the issues identified as most relevant to the companies in the disclosure analysis and illustrative examples of good practice. Not all issues will apply to every company. For investors whose mandates include stewardship or the assessment of nature-related risks and impacts, the following issues may provide useful starting points for company-specific engagement. Their relevance will depend on the company's activities, locations and risk profile, as well as the investor's mandate and investment approach. Where a company has not identified an issue that peers in the sector consider material, this omission may itself be a useful starting point for engagement.

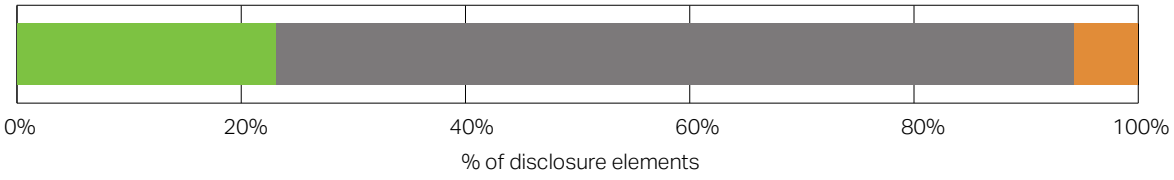
Based on our analysis of disclosure progress and gaps, investors can engage companies in this sector on:

- The absolute year on year reductions in active pharmaceutical ingredient (API) and antibiotic residues in wastewater, rather than management plan deployment used as an outcome proxy. **Illustrative Practice:** Disclosing continuous, site-level concentration monitoring of API discharges against mass balance limits, ensuring effluent remains below established Predicted No-Effect Concentrations (PNECs).
- Plans to introduce quantified, time-bound water and nature targets where current goals across the sector remain qualitative. **Illustrative Practice:** Establishing SBTN-validated (Science Based Targets Network) targets for freshwater quantity and pollution reduction across direct operations and priority supply chain nodes.
- Strategies for reducing absolute freshwater withdrawal at the most water-stressed sites. **Illustrative Practice:** Setting site-specific, absolute volume reduction targets specifically for facilities operating in high baseline water stress basins.
- How companies are progressing from screening direct scope impacts and risks using ENCORE to consider whole of value chain impacts and risks. **Illustrative Practice:** Scaling spatial overlay screening tools like ENCORE beyond Tier 1 suppliers down to Tier 3 agricultural substrate and chemical raw material suppliers to quantify upstream biodiversity and water risk exposure.
- Disclosure of the ecosystem origin of biotech inputs and the degradation risk in those source ecosystems, a dependency currently identified but not yet managed against targets. **Illustrative Practice:** Providing supply chain traceability for key biological inputs and target-backed commitments to minimise habitat degradation at source points.
- Quantitative soil pollutant and non-GHG air pollutant targets, given that both pressures are material for this sector. **Illustrative Practice:** Setting time-bound percentage reduction targets for localized volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and chemical sludge waste, tracked via site-level emissions monitoring.
- The share of executive incentive tied specifically to nature outcomes, given that only a broader sustainability weighting is currently disclosed. **Illustrative Practice:** Allocating a specific percentage of executive variable long-term incentive plans directly to verified nature metrics.

Health Care Disclosure Progress by Pillar 2023–2026



Health Care
Governance 2023–2026



Progressed

Board oversight of nature strengthened at both companies. Both moved from partial to full disclosure of the frequency the board is informed of nature-related issues and of board oversight in setting nature performance objectives. Both moved from no disclosure to disclosing board competence on environmental and nature-related issues. Nature- and climate-related metrics are now incorporated into executive remuneration at both companies.

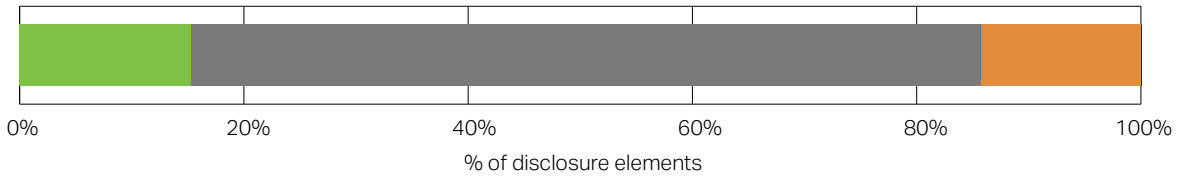
Unchanged

Dedicated board committees reviewed environmental and biodiversity progress in both years, with the Chief Sustainability Officer or equivalent in the governance structure and formal board reporting lines. One company maintained comprehensive human-rights disclosure aligned to the UN Guiding Principles and OECD MNE Guidelines throughout. Both maintained grievance mechanisms, human-rights risk assessment and board oversight of human rights.

Remaining Gap

Human-rights disclosure still does not extend to the OECD MNE Guidelines or FPIC for one company.

Health Care
Strategy 2023–2026



Progressed

Both companies advanced spatial and risk disclosure, moving from no disclosure to publishing lists or maps of priority assets. One company now adopts the TNFD LEAP approach combined with WRI Aqueduct and ENCORE, to identify priority sites in water-stressed regions and moving from generic risk language to specific geographic exposure.

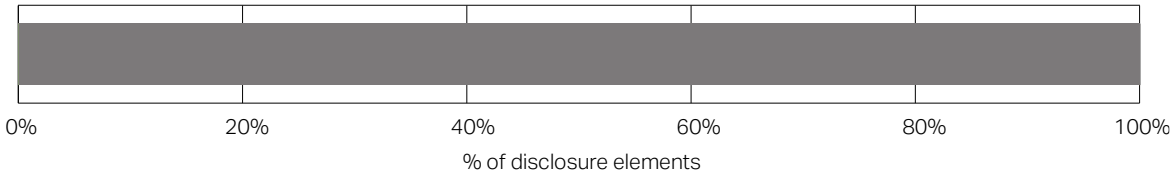
Unchanged

Both companies disclosed material nature-related issues, management practices and policies across the material drivers in both years. Further, water risk screening of high-stress sites was present throughout, as was supplier biodiversity expectation at one company

Remaining Gap

While both companies now publish climate scenarios analyses and transition plans, neither company integrates nature into transition plans and scenarios, and neither company deploys the mitigation hierarchy, consistent with 2023 findings.

Health Care
Risk & Impact Management 2023–2026



Unchanged

Coverage was strong in both 2023 and 2026, and disclosure depth improved in several key areas. One company's double materiality assessment matured into a formal, group-level CSRD/EFRAG-aligned assessment updated annually. One company now uses the TNFD LEAP approach to assess nature-related impacts and dependencies across their operations, identifying nature-related risks and opportunities.

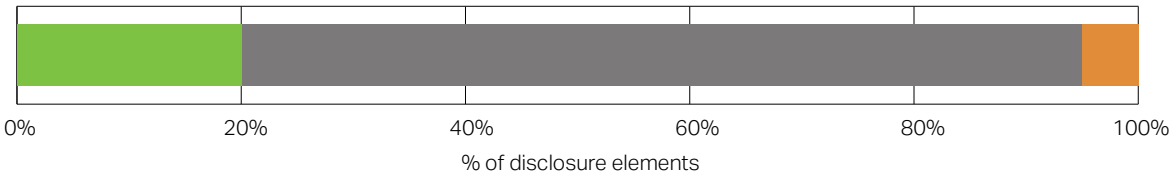
Unchanged

Both companies still conduct nature-related risk assessments across all material issues, including water risk assessments using bespoke methods based on the WRI Aqueduct tool, recognised frameworks like the Intergovernmental Policy Science Platform for Biodiversity and Ecosystem Services (IPBES) 2019 global assessment report, and SBTN methodology to identify and characterise the most material biodiversity impacts.

Unchanged

Although still present, disclosures on assessment details remain weakest across the Invasive species & other driver.

Health Care
Metrics & Target Setting 2023–2026



Progressed

Climate targets are SBTi-aligned at both companies in 2026: SBTi validated absolute reductions and 100% Renewable Electricity initiative (RE100) aligned renewable-electricity targets at one company; and SBTi validated operational and supplier-engagement targets at the other, both targeting net zero by 2045. One company also added a quantified pollution and waste suite, a measurable environmental-fate assessment metric, and quantified water targets underpinned by its site water risk programme.

Unchanged

Both companies disclosed emissions against targets in both years. One with quantitative water, waste and biodiversity plan targets and the other qualitative water and nature targets, which were consistent across both years.

Remaining Gap

Climate target rigour diverges (SBTi-validated at both companies, on differing baselines, with no methane-specific or FLAG Scope 3 emissions targets). One company's water and nature targets remain non-quantified and non-timebound. Quantitative soil-pollutant and non-GHG air pollutant targets remain absent at both companies despite both being material.

Infrastructure Disclosure Analysis

Between 2023 and 2026 disclosures by both Infrastructure companies improved significantly.

One company went from limited spatial disclosures to TNFD LEAP asset-level mapping across its global portfolio, and the other deepened a GRI Biodiversity Standard approach. Science-based climate targets, asset level physical risk modelling and a No Net Loss/Net Positive Impact by 2050 commitments are in place. Quantitative disturbance metrics and biodiversity outcomes beyond species counts remain the principal gaps.

Materiality snapshot

Land/Water/ Ocean Use Change	• Terrestrial (habitat clearing and biodiversity loss from site development).	**Progressed**
Resource Exploitation	• Water use (water dependency for construction and building operations) • Other resource exploitation (sustainable material sourcing).	**Progressed**
Climate Change	• GHG emissions (heavy machinery) • Physical climate risk (to coastal and flood prone property) material.	**Progressed**
Pollution	• Solid waste (construction and demolition).	**Remaining Gap**
Invasives & Other (Disturbances)	• Disturbances (noise, dust, vibration from machinery)	**Unchanged**

Disclosure Quality Statement

Companies in this sector obtain external assurance over portions of their sustainability disclosures, with operational energy, GHG emissions, water and construction waste metrics subject to limited assurance and GRI aligned reporting in both years (one company using the GRI Biodiversity Standard, with TNFD aligned reporting adopted by 2026). Assurance over embodied carbon Scope 3 emissions, biodiversity outcomes and disturbance mitigation is narrower — areas material to companies in this sector and their investors. Baseline year and definitional variation across waste, water and embodied carbon targets limits comparability. Disclosure is strong on asset level physical climate risk and, at one company, spatial assessment. However, biodiversity outcome reporting beyond species counts and absolute embodied carbon trajectories remain incomplete.

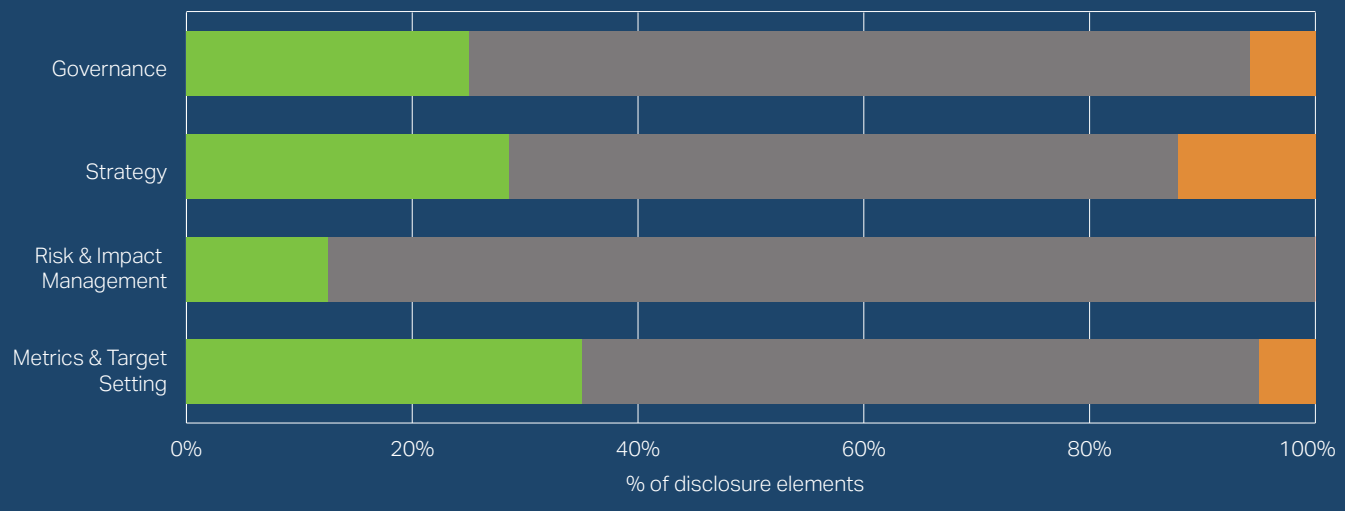
Guidance for investors in Infrastructure

The following points reflect the issues identified as most relevant to the companies in the disclosure analysis and illustrative examples of good practice. Not all issues will apply to every company. For investors whose mandates include stewardship or the assessment of nature-related risks and impacts, the following issues may provide useful starting points for company-specific engagement. Their relevance will depend on the company's activities, locations and risk profile, as well as the investor's mandate and investment approach. Where a company has not identified an issue that peers in the sector consider material, this omission may itself be a useful starting point for engagement.

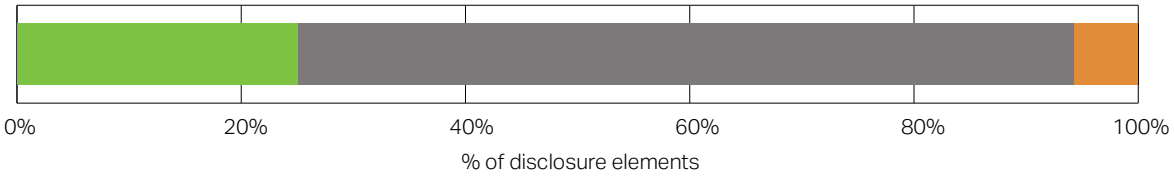
Based on our analysis of disclosure progress and gaps, investors can engage companies in this sector on:

- Asset level evidence that the property portfolio is shifting away from the most coastal and flood prone exposure, rather than hazard modelling coverage. **Illustrative Practice:** Relevant disclosure could include the criteria used to choose among adaptation, risk mitigation, insurance, redevelopment, acquisition restrictions or disposal for assets with material physical exposure.
- Reductions in absolute embodied-carbon trajectories across the development pipeline. **Illustrative Practice:** Setting maximum embodied carbon caps for all new construction assets, backed by structural design optimisation and procurement commitments for ultra-low carbon cement, steel, and bio-based materials.
- Their asset-level evidence that biodiversity impacts are being avoided, reduced and offset at new projects against no net loss commitments, rather than only reporting on. biodiversity assessment coverage and species counts. **Illustrative Practice:** Publishing project-by-project mitigation hierarchy audit reports that quantify baseline vs. post-construction habitat extent and condition, ensuring verified No Net Loss or Net Positive Impact (NPI) on biodiversity using standardised metric units.
- Reductions in absolute construction and demolition waste, water and energy use across the active pipeline, rather than diversion percentages and intensity ratios. **Illustrative Practice:** Enforcing asset-pipeline caps on raw material consumption, total volume of non-reusable waste generated, and absolute site water extraction, verified via site-level environmental management data.
- Reductions in absolute Scope 1 and 2 emissions and tenant-operated Scope 3 emissions across the long lived asset base, and the share of the asset base reached by retrofit programmes. **Illustrative Practice:** Committing to a target completion rate (e.g., retrofitting of total floor area annually) for deep energy efficiency upgrades and fuel switching across existing assets, combined with green lease mandates requiring tenants to report and cap operational emissions.

Infrastructure Disclosure Progress by Pillar 2023–2026



Infrastructure
Governance 2023–2026



Progressed

Board oversight strengthened at both companies by 2026, with board-level remuneration and expenditure oversight each strengthening. FPIC and affected-community identification improved at the one company that discloses them.

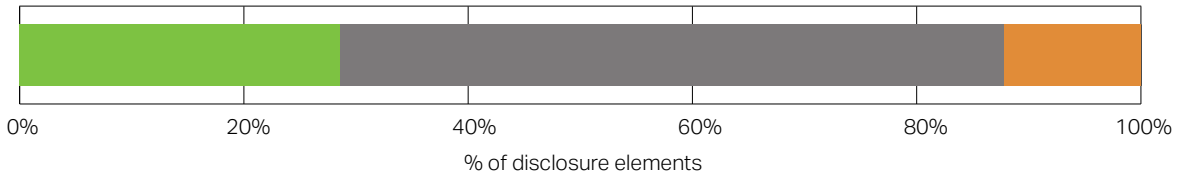
Unchanged

Both companies disclosed detailed board oversight of nature in both years through nature specific structures, a CFO led Sustainability Management Council under the board's corporate-governance committee at the other. Both maintained structured stakeholder engagement with tenants, customers, suppliers, regulators, non-government organisations and local communities, and whistleblowing/grievance mechanisms with anonymity protection, throughout.

Remaining Gap

FPIC, Indigenous peoples provisions and OECD MNE alignment are disclosed at one company only; the other discloses none of these in either year.

Infrastructure
Strategy 2023–2026



Progressed

One company adopted TNFD LEAP aligned asset level mapping across its global portfolio in terrestrial and freshwater ecoregions (including supply-chain priority sites for concrete and steel). The other deepened its existing GRI Biodiversity Standard priority-location table with the WWF Biodiversity Risk Filter, IBAT and International Union for Conservation of Nature (IUCN) Red List screening within 50km of sites, and systematic habitat conservation plans protecting named species counts. Scenario analysis now integrated nature-related scenarios (LEAP) with asset-level physical hazard modelling and water risk analysis.

Unchanged

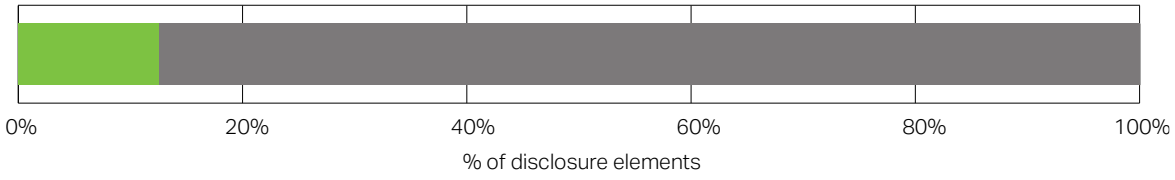
Both companies modelled asset-level physical climate risk using IPCC Shared Socioeconomic Pathways (SSP) based scenarios alongside TCFD aligned transition risk and IEA/ Network for Greening the Financial System (NGFS) scenarios in both years, addressing physical damage to coastal and flood-prone property.

Remaining Gap

There remains a notable gap in disclosures related to invasive species management strategies. Neither company provided information on this issue.

Infrastructure

Risk & Impact Management 2023–2026



Progressed

Both companies matured their nature-related risk process to include all five phases (identification, assessment, prioritisation, management, monitoring) by 2026, integrated with enterprise risk management, with scored risks now informing site selection and design.

Unchanged

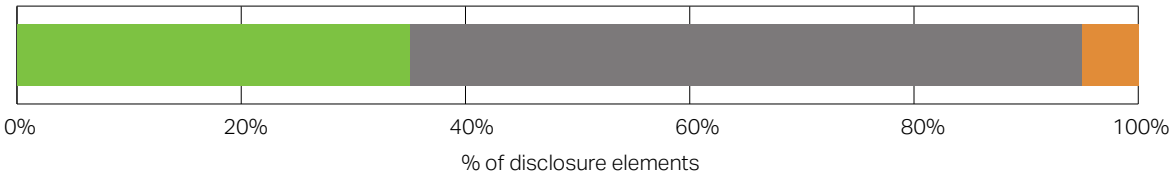
Both companies continue to embed nature-related risks in supplier evaluations throughout (e.g., biodiversity provisions in supplier codes; supplier sustainability-related self-assessment with onsite due diligence at one company, EcoVadis based assessment with ISO 14001 procurement guidelines at the other).

Remaining Gap

Upstream/supply-chain risk for embedded commodity impacts is now in scope but assessed qualitatively, not measured. An OECD six-step due diligence process is disclosed at one company only, but recorded as present for the sector, in alignment with 2023 findings.

Infrastructure

Metrics & Target Setting 2023–2026



Progressed

One company added interim Scope 1, 2 and 3 emissions reduction percentage targets where its 2023 disclosure had only an unquantified 2045 net zero year. One company adopted an explicit No Net Loss followed by Net Positive Impact by 2050 commitment mirroring TNFD and SBTN language, alongside a Net Zero Deforestation by 2050 commitment.

Unchanged

Both companies disclosed science-based / SBTi aligned climate targets in both years. The other company already had targets in 2023 measured against a baseline: percentage reduction for Scope 1 and 2 emissions (absolute), percentage reduction per square metre for Scope 3 leased assets and capital goods.

Remaining Gap

Disturbance specific quantitative targets (noise, dust, vibration, wildlife disturbance limits) are absent in both years despite disturbances being material. Biodiversity outcome reporting is limited to species protection counts rather than population health or habitat condition metrics, and one company does not yet disclose a total land-use footprint or ecosystem area managed metric.



Renewable Resources (Forestry and Timber) Disclosure Analysis

Both disclose strongly on forests and land use related issues.

Third-party certification is detected across more than 90% of timber supply, and HCV/HCS assessment and FPIC is operationalised at landscape level. Beyond this, disclosures between companies diverge. One leads on water, absolute-climate and pollution targets and a full Scope 1–3 emissions inventory, while the other leads on community engagement, conservation and biodiversity outcomes. Quantitative soil pollutant targets remain absent at both.

Materiality snapshot

Land/Water/ Ocean Use Change	• Terrestrial (the forest land base). Clear cutting and habitat alteration is the core nature risk locus for both firms.	**Progressed**
Resource Exploitation	• Water use. Pulp and paper is among the most water intensive industries. • Paper is a forest risk commodity	**Remaining Gap**
Climate Change	• GHG emissions (operational) plus dependency on climate regulation services; long lived forests exposed to drought, wildfire and pests.	**Remaining Gap**
Pollution	• All four sub-pressures material at mills & forestry concession: • non-GHG air, solid waste, water pollutants, soil pollutants.	**Remaining Gap**
Invasives & Other (Disturbances)	• Biological alterations/ interferences (dependency on pest control ecosystem services).	**Progressed**

Disclosure Quality Statement

Companies in this sector are strongest where a measurable target is tied to a stated baseline and an external check — climate, water and pollution targets at the industrial company carry explicit baselines, alongside continuous emissions monitoring and Accountability 1000 Assurance Standard (AA1000) assured water data. Third-party sustainable forestry certification (above 90% of supply) and HCV/HCS verification are the strongest reliability anchors. Assurance does not yet extend to absolute non-GHG air pollutant trajectories, soil pollutant outcomes or biodiversity outcomes beyond population counts (all areas material to companies in this sector), so the verified portion is narrower than the disclosed portion. Differing baselines, priority site definitions and certified fibre scopes make the two business models difficult to compare.

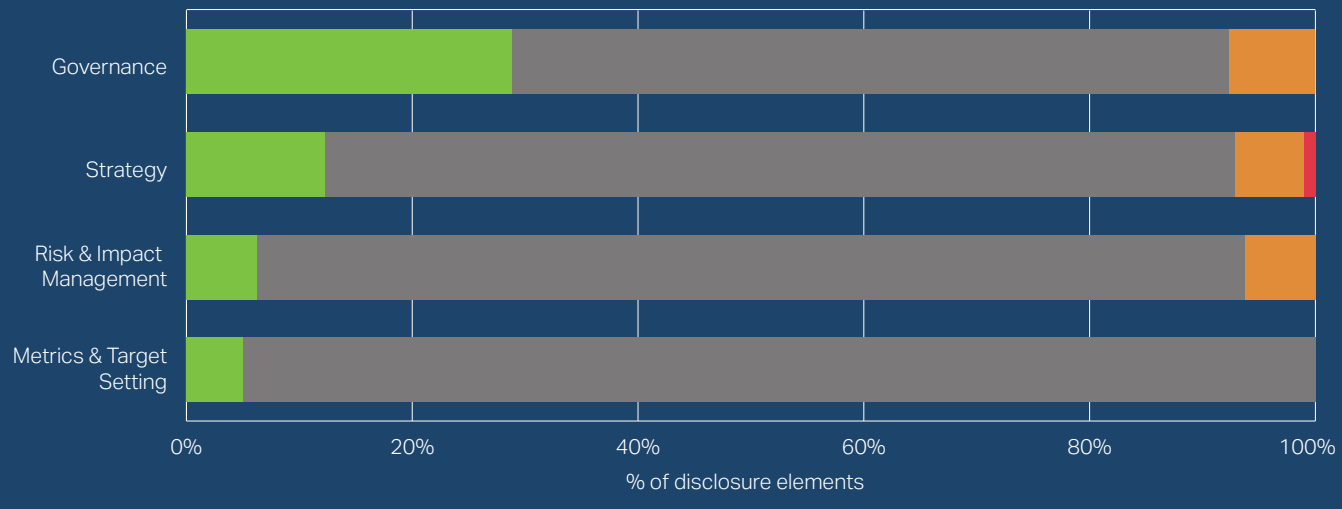
Guidance for Investors in Renewable Resources (Forestry & Timber)

The following points reflect the issues identified as most relevant to the companies in the disclosure analysis and illustrative examples of good practice. Not all issues will apply to every company. For investors whose mandates include stewardship or the assessment of nature-related risks and impacts, the following issues may provide useful starting points for company-specific engagement. Their relevance will depend on the company's activities, locations and risk profile, as well as the investor's mandate and investment approach. Where a company has not identified an issue that peers in the sector consider material, this omission may itself be a useful starting point for engagement.

Based on our analysis of disclosure progress and gaps, investors can engage companies in this sector on:

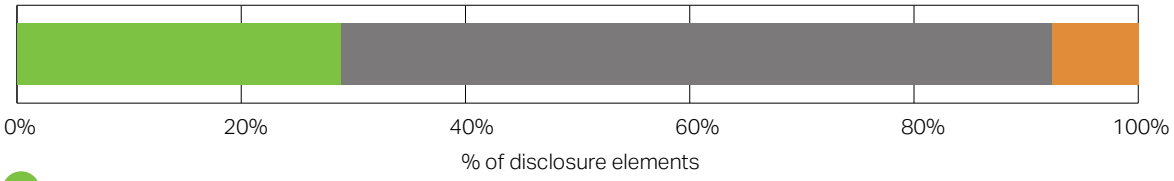
- Reductions in absolute year on year pollution volumes across air, water and solid waste, and disclosure of pollution-abatement spending against the reduction delivered. **Illustrative Practice:** Disclosing annual absolute tonnage reductions in key pollutants and expenditure breakdown to quantify the return on pollution-abatement investments.
- Evidence of biodiversity outcomes beyond protected area, including species population trends and habitat condition verified by independent monitoring against a baseline, rather than protected area counts and certification coverage. **Illustrative Practice:** Publishing longitudinal, third-party biodiversity monitoring data across managed areas that demonstrates stable or increasing target indicator species populations relative to a historic baseline.
- Evidence that drought, wildfire and pest outbreak risk is priced into harvest and species planning decisions across the long lived forest asset base, rather than scenario analysis coverage and long dated targets. **Illustrative Practice:** Adjusting long-term allowable annual cut (AAC) calculations and altering species mixes based on localized 10-to-30-year climate-stress projections to build ecological resilience against fire and pest pressure.
- Evidence that community and Indigenous consultation is changing sourcing and operational decisions, rather than on consultation counts and policy adoption. **Illustrative Practice:** Demonstrating operational adjustments, such as redrawing harvest boundaries, excluding culturally sensitive watersheds, or establishing co-management agreements, as a direct outcome of FPIC processes.
- Plans to quantify and disclose trajectories for pollutants that are of high materiality, yet to be disclosed, and on plans to harmonise baselines and definitions so that different business models can be compared on a like for like basis. **Illustrative Practice:** Disclose previously unmapped material pollutants using consistent metrics and baseline-year definitions across both natural forest and plantation holdings.

Renewable Resources (Forestry and Timber) Disclosure Progress by Pillar 2023–2026



Renewable Resources (Forestry and Timber)

Governance 2023–2026



Progressed

Governance disclosures strengthened across board oversight of nature-related expenditures, their role in setting nature performance objectives, and monitoring progress against goals.

Unchanged

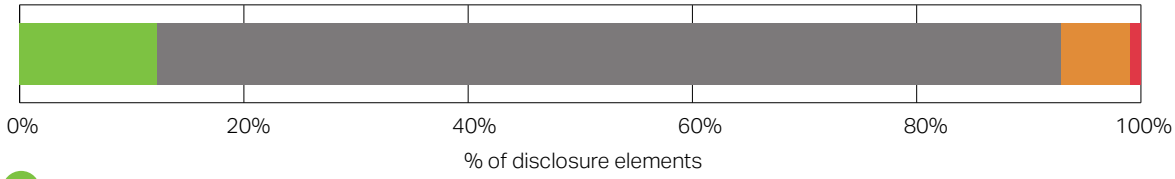
Both companies operationalised FPIC at landscape level in both years, anchored in their certification regimes (Programme for the Endorsement of Forest Certification (PEFC) at one, Forest Stewardship Council (FSC) at the other). Both maintained grievance mechanisms, supplier codes of conduct, and FPIC based identification of community and Indigenous sites in both years indicating consistently strong management of stakeholders and human rights issues and risks.

Remaining Gap

For one company in particular, persistent governance gaps remained across issues like frequency of the board being informed of nature related issues, the incorporation of nature metrics into remuneration, and board nature-related competencies.

Renewable Resources (Forestry and Timber)

Strategy 2023–2026



Progressed

Expansion of disclosures detected in 2026 to include explicit circular bioeconomy model, standalone biodiversity and sustainable forest management supplier policies, and quantification of nature-related financial impacts.

Unchanged

Adoption of the mitigation hierarchy not explicitly stated. This remains a persistent gap from 2023. Invasive species management is also a consistent gap.

Remaining Gap

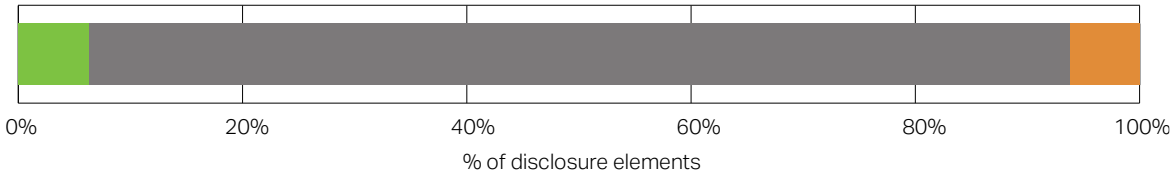
Both companies disclosed mature land-based management in both years. This includes third-party certification across effectively all of one company's supply (PEFC, with controlled source remainder) and full FSC certification of the other company's own concession (with most of the total wood supply third-party certified), alongside HCV/HCS assessment, reduced impact logging, satellite mapped concession boundaries, and zero deforestation / no conversion commitments. The sector's clearest shared strength.

Regressed

One company dropped its high-water risk spatial disclosure in 2026 (disclosed in 2023, not in 2026). This is consistent with water use being immaterial based on detailed site surveys and natural capital assessments.

Renewable Resources (Forestry and Timber)

Risk & Impact Management 2023–2026



Progressed

One company moved from no disclosed scenario analysis to a sophisticated multi-dimensional analysis (climate, forests and water; qualitative and quantitative; aligned to a 1.5°C pathway, horizons to 2050) and disclosed a 1.5°C aligned transition plan (noted as not publicly available).

Unchanged

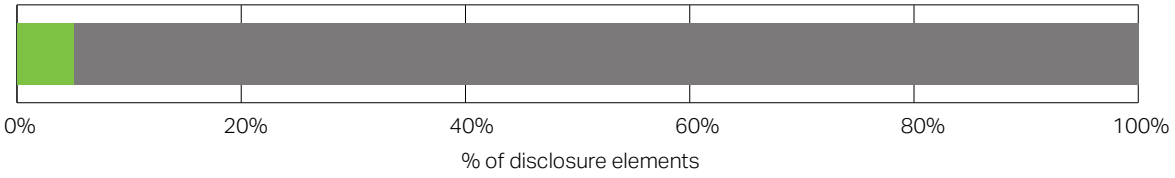
HCV/HCS assessments confirmed by independent experts, and third-party certification across most of the supply for both companies in both years.

Remaining Gap

Transition plan and scenario analysis adoption remains uneven, with one company disclosing neither in 2023 nor 2026.

Renewable Resources (Forestry and Timber)

Metrics & Target Setting 2023–2026



Progressed

Both companies now disclose biodiversity and disturbance outcome targets. Targets include quantified priority species population targets, a fire affected area target, a hunting trap density target, and a % reduction in illegal poaching tools target against a baseline year.

Unchanged

Both companies continued to disclose zero deforestation / no conversion commitments.

Unchanged

Despite targets being present for pollution at the sector level, one company continued to disclose no specific, measurable pollution targets in either year (e.g., a qualitative waste valorisation commitment appears in 2026 but without a dated, measurable target). And biodiversity outcome reporting beyond population counts (habitat condition, population health verified independently) is limited at both.



Resource Transformation (Chemicals and Fertiliser) Disclosure Analysis

Disclosure was uneven in 2023, with the gap between companies closing by 2026.

The lagging company from 2023 established clear emissions boundaries, and improved pollution disclosure and discussion of nature in 2026. Both have now performed TNFD LEAP spatial assessments, formal transition plans and science-based net zero commitments. Quantitative soil pollutant targets remain absent at both.

Materiality snapshot

Land/Water/ Ocean Use Change	• Immaterial (excludes downstream issues related to product use)	**Unchanged**
Resource Exploitation	• Water use is a dominant resource issue. Chemical manufacturing is among the most water intensive industries.	**Remaining Gap**
Climate Change	• GHG emissions arising from energy intensive processing and feedstock emissions.	**Progressed**
Pollution	• All four sub-pressures are material. Significant risk of air, soil and water pollution through chemical raw material sourcing and manufacturing.	**Remaining Gap**
Invasives & Other (Disturbances)	• Immaterial	**Unchanged**

Disclosure Quality Statement

Companies in this sector obtain external assurance over portions of operational energy, GHG emissions, water and waste metrics, with consolidated water data externally assured at one company and full ISO 14001/50001 site certification at the other. Representativeness is uneven: one company's 2023 figures were reported on a parent or head office boundary that did not reflect the operational footprint, improving toward consolidated reporting by 2026. The other's air pollutant and water metrics were reported less completely in 2026 than 2023. Some pollution and resource targets are for an office boundary or commercial expansion objectives rather than operational impact reduction targets. Quantitative soil pollutant targets are absent at both — areas material to companies in this sector and their investors.

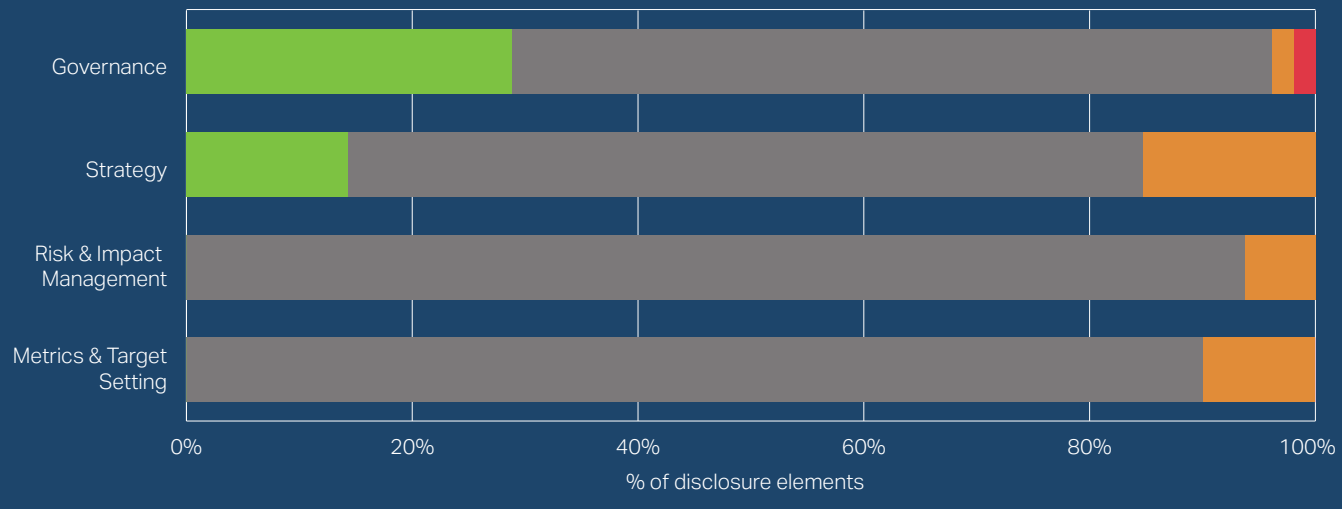
Guidance for Investors in Resource Transformation (Chemicals & Fertilisers)

The following points reflect the issues identified as most relevant to the companies in the disclosure analysis and illustrative examples of good practice. Not all issues will apply to every company. For investors whose mandates include stewardship or the assessment of nature-related risks and impacts, the following issues may provide useful starting points for company-specific engagement. Their relevance will depend on the company's activities, locations and risk profile, as well as the investor's mandate and investment approach. Where a company has not identified an issue that peers in the sector consider material, this omission may itself be a useful starting point for engagement.

Based on our analysis of disclosure progress and gaps, investors can engage companies in this sector on:

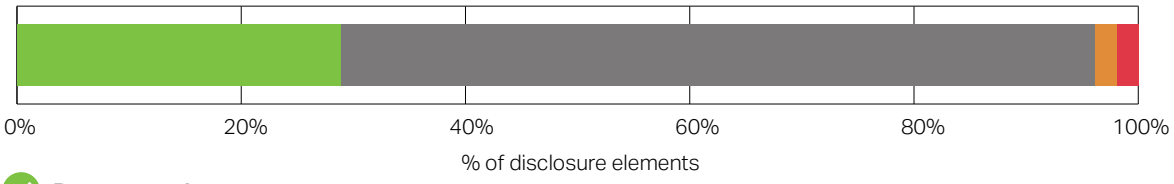
- Evidence that process-related emissions are declining across major production processes, not only through fuel switching or renewable energy procurement. **Illustrative Practice:** Publishing annual absolute emissions and emissions-intensity trajectories for key production processes, alongside facility-level decarbonisation plans, deployment milestones for emissions-reduction technologies, and progress against publicly disclosed implementation timelines.
- Evidence that hazardous waste generation is declining in absolute terms across major waste streams, not only through higher diversion or recycling rates. **Illustrative Practice:** Disclosing annual hazardous waste volumes by waste type, year-on-year reduction trajectories against stated baselines, third-party assurance outcomes, and site-level waste reduction plans for the highest-generating facilities.
- Evidence that freshwater withdrawals are declining at water-stressed manufacturing sites, supported by investments in alternative water sources. **Illustrative Practice:** Publishing site-level freshwater withdrawal data, reduction targets for facilities in water-stressed regions, water recycling and reuse rates, alternative water source utilisation, and capital investments in long-term water security initiatives.
- Plans to disclose quantitative reduction trajectories for non-GHG air pollutants and contamination risks associated with production processes. **Illustrative Practice:** Reporting annual facility-level emissions of key air pollutants, contamination incidents, community monitoring outcomes, and time-bound targets linked to operational improvements and anticipated regulatory requirements.
- Evidence that companies understand and are managing exposure to emerging chemical regulations and substance restrictions. **Illustrative Practice:** Publishing assessments of product portfolio exposure to emerging regulatory requirements, revenue associated with potentially affected substance categories, plans for substitution or reformulation, and investment commitments supporting the development of lower-risk alternatives.

Resource Transformation (Chemicals and Fertiliser) Disclosure Progress by Pillar 2023–2026



Resource Transformation (Chemicals and Fertiliser)

Governance 2023–2026



Progressed

Both companies strengthened board oversight of nature between 2023 and 2026. Board oversight of major nature expenditure is now fully detected, nature-related metrics added to executive remuneration (bonuses tied to climate commitments and the transition plan), and there is board oversight in setting nature performance objectives.

Unchanged

Board accountability and overall governance of nature were disclosed by both companies in both years, anchored in board supervised sustainability committee structures. Both companies disclosed comprehensive, broadly comparable human rights governance throughout. A Human Rights Policy, commitment to the UN Guiding Principles, grievance and whistleblower channels, human rights risk assessment using external experts, and International Labour Organization (ILO) core labour standards.

Remaining Gap

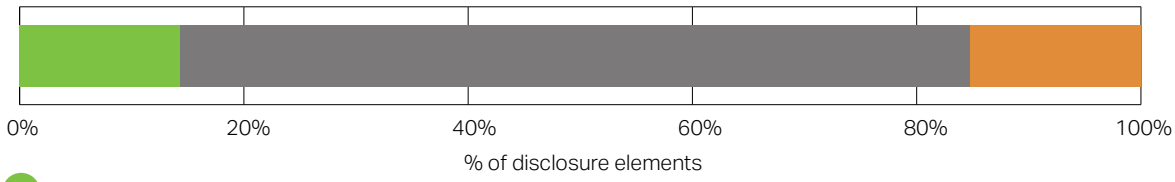
One company still does not tag any board member's competence as nature related. Neither company discloses the precise proportion of executive incentive tied to nature.

Regressed

Changes to the disclosure layout led to the omission of a board member skill matrix, that was consequently recorded as a regression for transparency of board nature competences.

Resource Transformation (Chemicals and Fertiliser)

Strategy 2023–2026



Progressed

Both companies advanced spatial disclosure by 2026. For example, one company began publishing maps, a geospatial LEAP analysis identifying protected areas, Key Biodiversity Areas, critical ecosystems and high water risk zones, mapping operational sites with a 5km area of influence around each, though concentrated in its single geography.

Unchanged

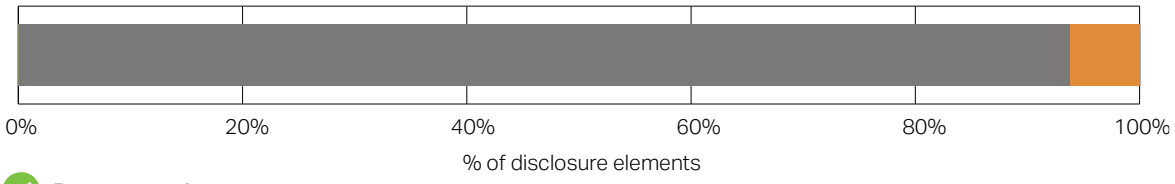
Both companies extended scenario analysis from climate to nature by 2026. One company now discloses a quantitative LEAP based nature scenario analysis on a specific forest asset comparing management scenarios with quantified biodiversity outcomes.

Remaining Gap

Both companies present desalination as part of their water-security strategies, while providing limited discussion of potential trade-offs such as energy demand and hypersaline brine management. In one case, this is particularly relevant given that the company consumes tens of millions of cubic tonnes of water annually and reports that 100% of effluent is discharged into the sea at coastal sites. The company also has targets to expand desalination capacity as part of its approach to managing water-supply risk. Additional disclosure on these trade-offs would support a more balanced assessment.

Resource Transformation (Chemicals and Fertiliser)

Risk & Impact Management 2023–2026



Progressed

One company did not disclose a nature risk register consistent with the LEAP approach, however, it did improve from its 2023 position of no cross-cutting nature framing.

Unchanged

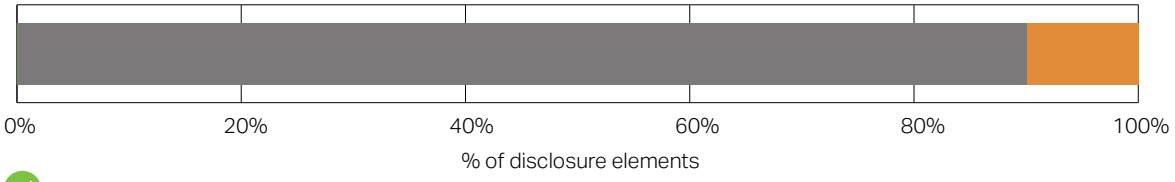
One company moved from a single materiality approach in 2023 (with double materiality not "explicitly mentioned") to explicit double materiality by 2026, referencing GRI/ Sustainability Accounting Standards Board (SASB)/CSRD.

Remaining Gap

Both companies disclosed a nature-related risk-identification-and-assessment process and integration of nature risk into enterprise/centralised risk management in both years. One through an integrated company-wide system under a portfolio management committee, the other through its enterprise Risk Management (ERM) framework.

Resource Transformation (Chemicals and Fertiliser)

Metrics & Target Setting 2023–2026



Progressed

One company disclosed a 2026 no deforestation by 2030 supply chain commitment and transparently discloses weak certification spots (a low certified palm oil rate, no certified lumber).

Unchanged

Both disclosed dated, baselined climate targets and waste-diversion commitments in both years.

Remaining Gap

Quantitative soil pollutant targets are absent at both companies in both years despite soil pollution being rated material.



Transport (Marine) Disclosure Analysis

Disclosures advanced and underwent recalibration between 2023–2026.

By 2026 we detected TNFD LEAP aligned nature risk assessments, formal transition plans, double materiality and science-based climate targets at both. Both deploy green methanol vessels, ballast water management and whale zone speed reduction, which directly addresses the sector's material drivers. Quantitative marine ecosystem use-change metrics remain the principal gap (a key material issue), not detected at either company in either year, alongside lack of non-GHG air pollutant metrics. Efforts to improve ship circularity (e.g., recycling) continued in 2026. Disclosures regressed in direct response to materiality assessment.

Materiality snapshot

Land/Water/ Ocean Use Change	• Marine ecosystem use change from logistics routes and ports.	**Remaining Gap**
Resource Exploitation	• Immaterial.	**Unchanged**
Climate Change	• GHG emissions (Shipping fuel) and critical dependency on climate regulation services.	**Progressed**
Pollution	• All four sub-pressures are material: air (SOx/NOx), water (ballast and bilge water, scrubber wash water, antifouling), solid waste and soil pollution.	**Progressed**
Invasives & Other (Disturbances)	• Disturbances (underwater noise and vessel strike) • Biological alterations/ interferences (ballast water and hull biofouling invasive pathways)	**Remaining Gap**

Disclosure Quality Statement

Companies in this sector obtain third-party verified, ISO 14064 aligned GHG emissions inventories covering Scopes 1–3 emissions by 2026, with GRI reporting in both years and TNFD LEAP aligned reporting and CSRD/ ESRS preparation added in 2026. The companies have strengths: granular pollution metrics at one, a more complete climate inventory at the other. The headline material driver, marine ecosystem use change, is the least quantified. No quantitative metric was detected at either company in either year, and most spatial elements were absent — a gap material to companies in this sector and their investors. Disclosure balance also varies on technology trade-offs, with water pollutants impacts from specific technologies disclosed at one company but not the other.

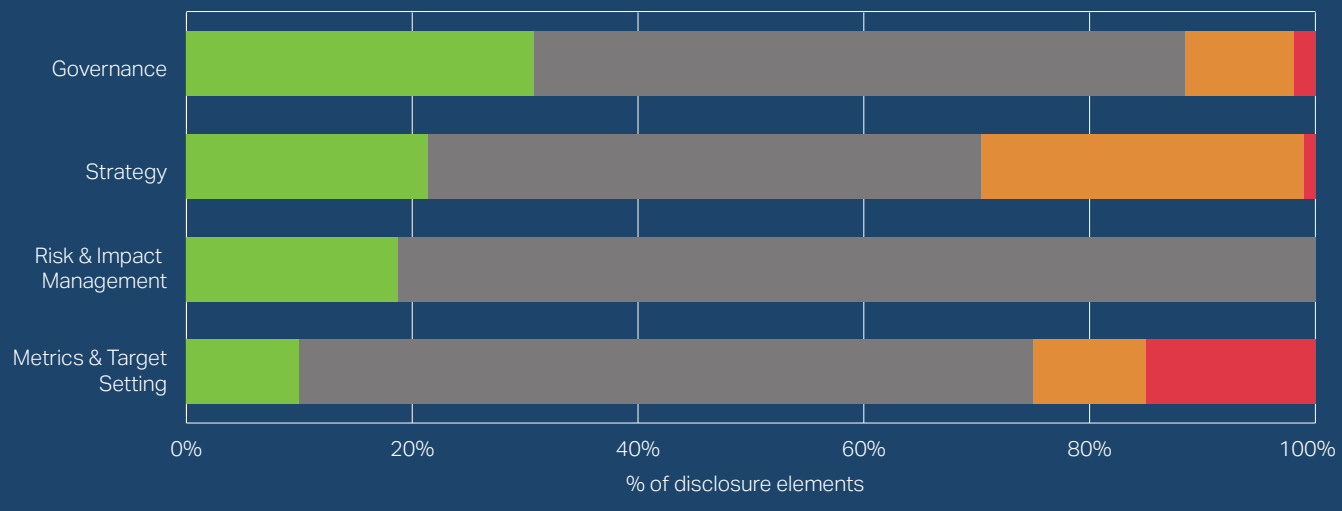
Guidance for Investors in Marine Transportation

The following points reflect the issues identified as most relevant to the companies in the disclosure analysis and illustrative examples of good practice. Not all issues will apply to every company. For investors whose mandates include stewardship or the assessment of nature-related risks and impacts, the following issues may provide useful starting points for company-specific engagement. Their relevance will depend on the company's activities, locations and risk profile, as well as the investor's mandate and investment approach. Where a company has not identified an issue that peers in the sector consider material, this omission may itself be a useful starting point for engagement.

Based on our analysis of disclosure progress and gaps, investors can engage companies in this sector on:

- Evidence on how companies are managing emerging challenges associated with scaling alternative and low emission fuel vessels. **Illustrative Practice:** Publishing dual-fuel fleet transition roadmaps that include safety protocols, supply chain availability assessments, and lifecycle toxicity evaluations for scaling alternative fuels like green ammonia or methanol.
- Plans to disclose the quantitative reduction trajectories for SOx, NOx and particulate matter, and on limitations of abatement technologies, not only their benefits. **Illustrative Practice:** Disclosing annual absolute tonnage reductions for air pollutants alongside operational data on exhaust gas cleaning systems (scrubbers), including washwater discharge volumes and unmitigated ultrafine particulate limitations.
- Evidence that ballast water and hull biofouling management is demonstrably reducing invasive-species-transfer risk, rather than compliance certification alone. **Illustrative Practice:** Disclosing continuous bio-fouling management logbooks, third-party port inspections, and biological efficacy testing of ballast water treatment systems beyond baseline IMO compliance certificates.
- Evidence of quantitative biodiversity targets, including metrics and measurable outcomes of invasive species and animal trafficking management plans, and the development of quantitative marine ecosystem use-change metrics, particularly around ports. **Illustrative Practice:** Setting measurable targets for vessel speed reductions in sensitive marine areas to mitigate whale strikes, combined with spatial tracking of habitat disruption during port calls and zero-tolerance wildlife trafficking audit metrics.
- Transparency regarding how many ship recycling projects are underway, the number of anticipated projects, based on vessel age, and any success so far with circularity projects. **Illustrative Practice:** Publishing a multi-year vessel retirement schedule detailing certified green recycling yards, material recovery yields and hazardous material inventory tracking.

Transport (Marine) Disclosure Progress by Pillar 2023–2026



Direction of change 2023–2026: Progressed · Unchanged · Remaining Gap · Regressed

Transport (Marine)
Governance 2023–2026



Progressed

Board oversight of nature-related issues was formalised at both companies by 2026. We detected board reporting frequency moving from absent/partial to disclosed, alongside board accountability, sustainability and nature-related metrics incorporated into executive remuneration and a commitment to the OECD MNE Guidelines detected for the first time.

Unchanged

Human rights governance is comprehensive and unchanged at both companies across both years. Human Rights Policies aligned to the UN Guiding Principles, grievance and whistleblower mechanisms, and human rights risk assessment were all detected in both years.

Remaining Gap

No disclosure of Indigenous Peoples' rights or FPIC processes was detected at either company in either year, and the OECD Guidelines commitment remains undetected for one company.

Regressed

Level of detail on board nature-related competencies regressed for one company and remained a persistent gap for another.

Transport (Marine)
Strategy 2023–2026



Progressed

The clearest Strategy movement is the build out of formal forward planning. We detected a formal transition plan at one company for the first time in 2026 (board level, aligned to the International Maritime Organization (IMO) Net Zero pathway), and the other's decarbonisation strategy is formalised into a board-approved climate transition plan. Both added marine stewardship practices, e.g., whale zone speed reduction, hull biofouling management, underwater noise mitigation.

Scenario analysis and resilience progressed from using IPCC Sixth Assessment Report (AR6) / Shared Socioeconomic, Representative Concentration Pathways (SSP RRP) and IEA Net Zero scenarios under TCFD, to include TNFD LEAP nature scenarios.

Remaining Gap

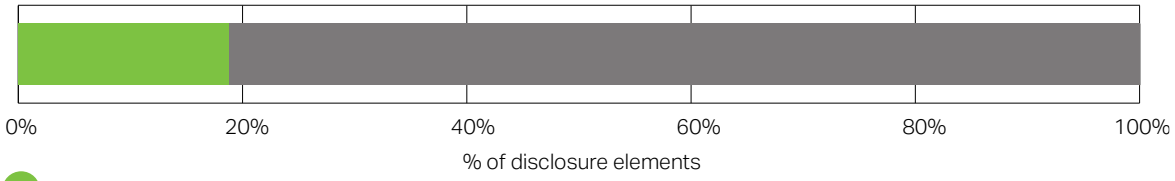
Spatial disclosures and adoption of the mitigation hierarchy are remaining gaps. Disclosure of areas of high ecosystem integrity or decline, or high-water risk areas, were not detected at either company, nor explicit use of the mitigation hierarchy.

Regressed

A more rigorous materiality assessment led to a shift in one company's nature-related impact and risk management, and collaborations aimed at addressing invasive species regressed at one company.

Transport (Marine)

Risk & Impact Management 2023–2026



Progressed

Both companies moved onto a TNFD LEAP aligned nature risk process by 2026, supported by ENCORE and WRI Aqueduct, with double materiality now detected at both. Pollution driver risk assessment moved from not detected at both companies in 2023 to disclosed in 2026, populating waste volume, particulate matter and International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI NOx assessments.

Unchanged

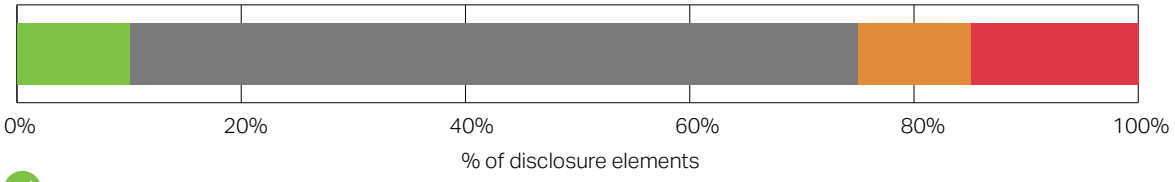
The underlying risk management architecture is disclosed but unchanged. Both companies run an enterprise risk framework which is strongest on assessment and management of climate and marine pressures – the same structural shape detected in both years.

Remaining Gap

Formal prioritisation and ongoing monitoring of nature-related risks were not detected as distinct, structured phases at either company.

Transport (Marine)

Metrics & Target Setting 2023–2026



Progressed

One company added a marine biodiversity target suite, a Net Positive Impact on ecosystems by 2050, 100% Ballast Water Management System installation, and underwater-noise reduction technology on new vessels.

Remaining Gap

No quantitative marine ecosystem use-change metrics (area impacted, area conserved or restored, extent of ecosystem use change) were detected at either company in either year.

Regressed

Regressions in target setting were detected for invasive species, water use and land use change for one company. This reflects a strategic shift in focus from a more rigorous materiality assessment that identified new high priority areas.

4 Japan Spotlight



Photo: sora-sagano-5e39W8PNWX4-unsplash

Japan hosts the world's largest concentration of TNFD adopters. This analysis compares a sample of n = 4 Japanese companies, presented here as a sector, to the broader baseline sample of 15 non-Japanese companies.[20]

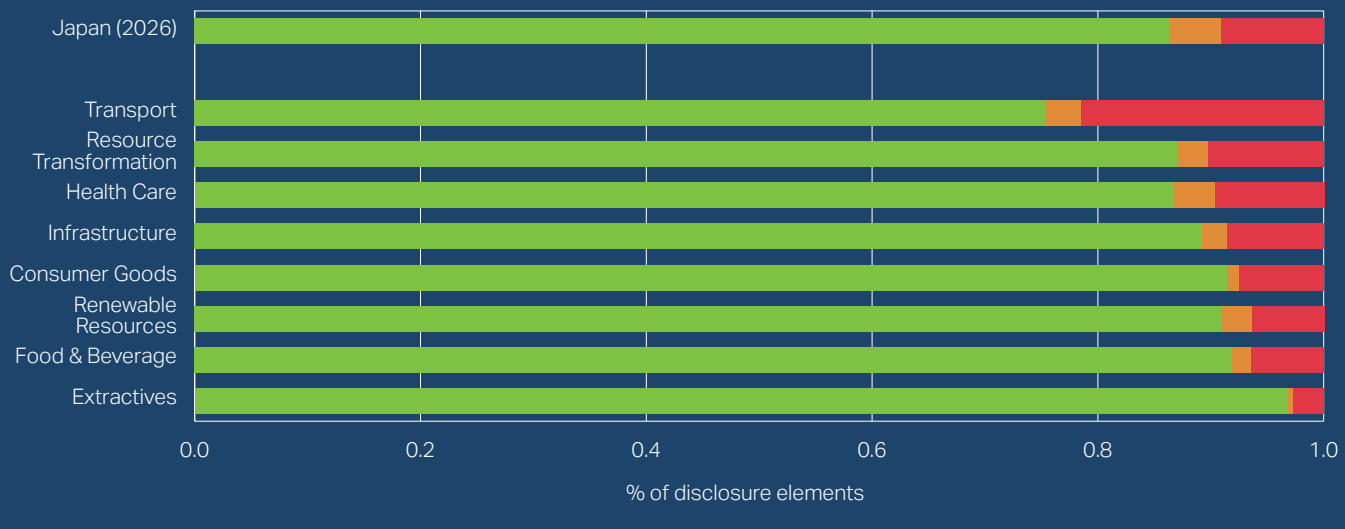
For the Japanese company sample, disclosures on governance, double materiality and target setting are on par with or above the non-Japanese companies. The depth of site specific nature assessments is the weakest disclosure pillar, trailing the baseline by the widest margin in the study.

Three in 4 of the companies publish TNFD reports, indicating strong strategic oversight of nature-related issues, with areas for improvement in locating on the ground exposures at the site level.

Companies in our Japan spotlight sample are disclosing information relevant to all TNFD pillars and core recommendations. The % in the matrix below represent the total proportion of disclosure elements for which disclosures were detected. As illustrated, disclosures are present for most drivers across most assessable elements in the TNFD framework included in our analysis, with invasive species and Strategy D elements representing areas most in need of improvement.

20 Of the original sample of 16 companies assessed in 2023 and 2026, 15 are non-Japanese companies. The sample of four Japanese companies includes 1 Japanese company from the original sample of 16 (from the Resource Transformation sector), plus three additional companies.

Japan disclosure analysis by sector



2026 snapshot Present Partial Not detected

Japan Spotlight Disclosure Analysis

Recommendations disaggregated by nature loss driver

		Strategy		Risk Management	Metrics & Target Setting	
Nature Loss Driver		Strat. A	Strat. B	RM Ai–Aii	M&TS A&B	M&TS C
	**Land/Water/ Ocean Use Change**	100%	96%	100%	100%	100%
	**Resource Exploitation**	100%	100%	100%	100%	100%
	**Climate Change**	100%	96%	100%	100%	100%
	**Pollution**	100%	89%	100%	100%	100%
	**Invasives & Other (Disturbances)**	50%	68%	75%	n/a	75%

Remaining recommendations (not disaggregated by driver)

Overall % Yes	Gov. A	Gov. B	Gov. C	Strat. C	Strat. D	RM Ai	RM B	RM C
% of Yes responses	75%	100%	75%	100%	54%	100%	100%	100%

n/a = driver not applicable to this recommendation · Source: TNFD Disclosure Snapshot 2026 (anonymised)

Disclosure Quality Check

Across the cluster, disclosure is strongest on governance and targets and weakest on location. Disclosures on board oversight, double materiality and dated climate and nature targets detected for all companies, and SBTi-validated deforestation and quantified pollution targets detected for one. Spatial disclosures are where coverage and quality drops sharply and unevenly. Most non-climate targets lack baselines or framework alignment, and quality assurance on metrics and targets is uneven across the sample.

Japan Disclosure Highlights by Company Sector

Food & Beverage	Upstream agricultural issues emphasised in disclosures. Multiple explicit transition plans: net-zero roadmap, circular economy, a Nature Positive plan using the Avoid, Reduce, Restore, Regenerate, Transform (AR3T) framework in place, SBTi validated climate targets, LEAP based commodity prioritisation, and location tagged conservation footprints (tea, OECM certified vineyards).
Infrastructure (Home Builder)	Disclosures focused on construction and procurement issues. ENCORE-based spatial screening, a four quadrant TNFD scenario model, dated GHG emissions targets, a deforestation and conversion free wood commitment, and quantified waste, water and pollutant metrics. Risk process that is identified and managed without disclosed assessment, prioritisation or monitoring.
Infrastructure (Utilities)	Discloses a standalone annual TNFD report, a five-phase nature risk process, a Kunming-Montreal aligned nature transition plan (4°C) and Nature Positive scenario analysis, as well as a multiyear pollutant series, and forest-carbon metrics.
Resource Transformation	Significant improvement in the integration of nature into governance processes and structures.

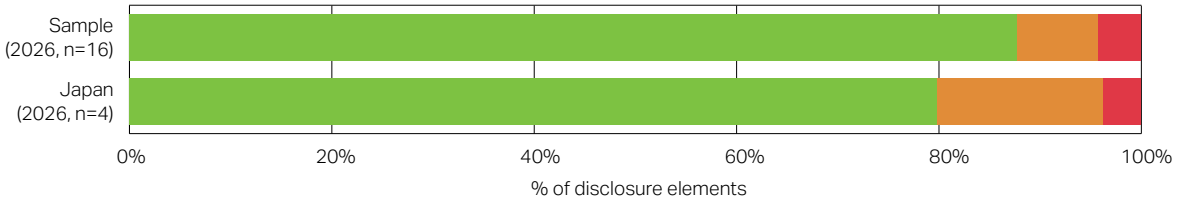
Summary

Three additional Japanese companies were included to examine disclosure practice in a market with a comparatively high number of TNFD adopters. Among the four companies reviewed, three disclose against the framework in full, with one company publishing a standalone annual TNFD report since 2023. On measures closely related to the TNFD's areas of focus, including board oversight structures, double materiality, transition planning and target-setting, the cluster sits at or above the cross-sector average.

However, despite these promising results, the depth of disclosures was lacking across most pillars. The cluster's spatial disclosures, e.g., the location level identification of where nature impact and dependency actually occur, is the weakest pillar relative to the baseline sample of 15 companies by a wide margin, and while nature targets are strong on coverage, baselines, independent verification, and alignment with reognised standards is uneven outside of climate.

For investors, these results reinforce that TNFD adoption is not a measure of risk and impact management quality. Investors will need to use TNFD adoption as a starting place, but not the end goal of company engagement.

Japan
Governance 2026



Present

Board oversight strengthened at both companies by 2026, with board-level remuneration and expenditure Board oversight of nature is strong across the cluster. Reviewing and guiding nature strategy, setting nature performance objectives and monitoring progress against goals are fully detected across the four companies, meeting or exceeding the cross-sector average.

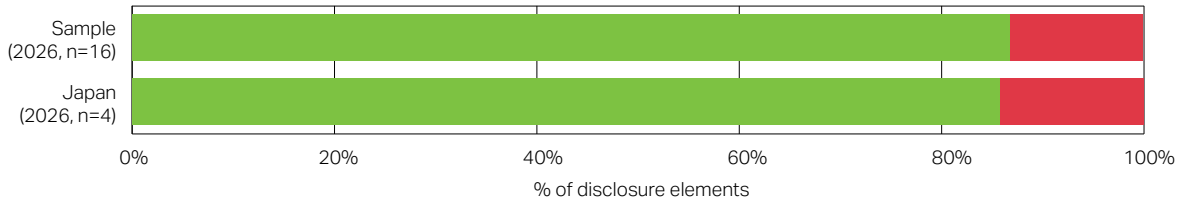
Partial

The OECD MNE Guidelines commitment and human-rights risk assessment and materiality are only partially detected at some companies, pulling disclosure coverage below the cross-sector average.

Not Detected

Board oversight of major nature expenditure is only partially detected at two of the three companies in the dataset, and board competence on nature-related issues is only partially described or undetected across the cluster.

Japan
Strategy 2026



Present

Echoing cross sector insights, disclosures are most complete for risk and impact management. Double materiality is fully detected across the cluster, with one company conducting a multi-step materiality process scored on social and economic value axes, validated by external experts and approved by the board; while another applies double materiality through its LEAP assessment.

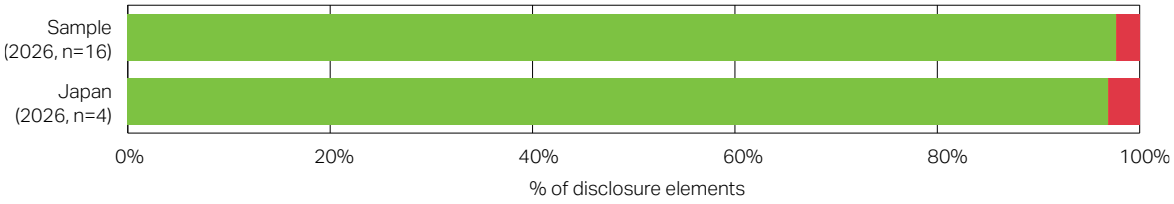
Present

Risk assessments detected use recognised tools and frameworks (TNFD LEAP, ENCORE, WRI Aqueduct), consistent with the more mature sector disclosers.

Not Detected

The depth and coverage of disclosures on overarching nature risk management processes is uneven across the cluster. Identification and management phases are well disclosed, but assessment, prioritisation and monitoring are incomplete for some companies.

Japan
Risk & Impact Management 2026



Present

Disclosures detected on the integration of nature into business models, management practices, and supplier and sourcing practices surpass the cross-sector average, and transition plans (including one nature transition plan that is Global Biodiversity Framework (GBF) aligned), scenario analysis and business resilience are all detected.

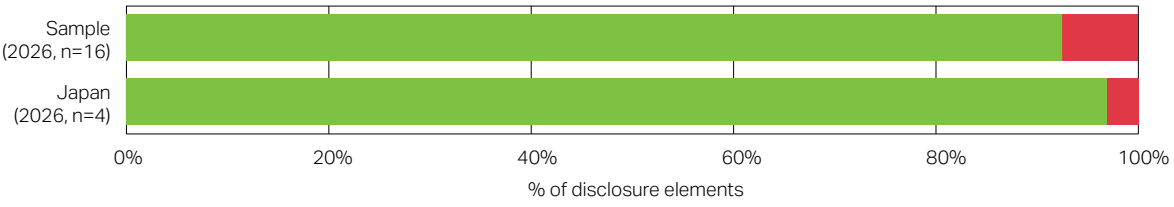
Present

Disclosures on most nature-related pressures were detected across all companies, indicating that the cluster has a sound awareness of their impacts and dependencies.

Not Detected

The principal gap pertains to spatial disclosures. Areas important to biodiversity and high ecosystem integrity or decline are only partial or undetected, and high-water risk identification is partial against the cross-sector average.

Japan
Metrics & Target Setting 2026



Present

The Japan cluster leads on target setting coverage, with clear, measurable, framework-aligned (TNFD/SBTN) targets detected for issues like deforestation and supply chain emissions detected across the four companies, within the scope of this limited sample.

Not Detected

Data on target baselines and external validation is limited across the sample. Outside climate, most targets report no baseline year and state no framework alignment, and several are not yet measurable, for example, one company expresses 'intentions' to set water targets, but none are described.

5 Key Disclosure Insights & Conclusion



Photo: iStock

Using the TNFD as a compass to navigate the disclosure landscape, we find that leading companies in high-risk sectors are already reporting against most TNFD requirements as part of their existing sustainability reporting suite, with Infrastructure and Health Care making considerable progress over the past 2–3 years.

Considering this progress, the question of what comes next and how to set meaningful expectations for companies moving forward is brought to the fore.

Looking more closely the evidence suggests that many companies are moving beyond fine tuning internal policy and procedural settings, toward demonstrating a more thorough grasp of how their business models and strategies are embedded in nature, the impacts, dependencies and financial exposures that this embeddedness reveals, and, most importantly, the management practices required to address these exposures.

But the disclosure picture is still highly uneven.

Some companies have progressed from very little mention of nature in 2023 (e.g., Resource Transformation) to now explicitly integrating nature into governance frameworks, and taking steps to locate and assess nature related issues at a high level using a double materiality approach. Others, (e.g., Consumer Goods) having started at this baseline, are now conducting sophisticated spatial assessments of their land and water-based footprints, setting no net loss and net gain nature targets aligned to the SBTN and GBF, and even conducting nature scenario analysis. In short, where some are earlier in their journey, others are well on the way to building the holistic understanding of the nature-business interactions they need to secure long term value creation and contribute positively to the resilience of the social and ecological communities they interact with and depend upon.
So, where to from here?



Photo: iStock

Expectations for Companies

Given the uneven progress across companies and sectors both within and beyond our sample, we suggest multi-tiered expectations for companies based on disclosure coverage and maturity:

Navigating to the Start

Given that our sample focused on assessing companies already engaged in leading practice, we acknowledge that most companies are still in the 'new to nature' cohort. In which case, expectations should focus on getting companies to the starting line by demonstrating they are integrating nature into governance structures and at least screening business activities for potential nature impacts and risks.

Laying a Strong Foundation

In 2026, we saw companies in Resource Transformation, Food and Beverage, and Transport (Marine) successfully navigate to the starting line. In the next 2–3 years, investors can reasonably expect these companies to conduct more comprehensive and site-specific assessments of their nature-related dependencies, impacts, risks and opportunities, using materiality approaches appropriate to their business and reporting context, and to use the findings to prioritise the issues most material to the business and its stakeholders, including nature. Companies may also find value in considering interactions among climate, forests, water and biodiversity, rather than assessing each topic entirely separately.

Transcending Disclosures

Finally, for the companies that have established a strong baseline and are already meeting the TNFD requirements, such as those in Consumer Goods and Extractives and Minerals, investors might observe a slight regression in disclosure coverage as companies recalibrate, shifting from a broad and shallow approach to focus more deeply on the issues that are most material to the business and its impacts on nature) and ideally, begin channelling more resources into advancing targets and achieving positive, real world impacts for human and ecological communities. Over the next 2–3 years, investors can expect companies to transcend the minimum practice established by the TNFD by taking a more systemic and holistic approach to managing nature-risks and impacts.



Photo: iStock

Expectations for Investors

The mounting pressure placed on companies to produce commensurable, quantifiable, causally precise accounts of material nature impacts and risks has revealed the limitations of existing monitoring and measurement methods. Nature is complex and systemic, meaning what is material and in need of management is not necessarily measurable.

It is for this reason that many financial supervisors[21] are now calling for precautionary approaches that aim to 1) act to address known causes of nature-degradation in the face of imperfect data, and 2) move away from 'precisely wrong' to more holistic and 'generally accurate' measures of company risks and impacts.[22] Even with the current patchy disclosure on financial impacts, the scale of potential impact is evident (tens of billions of dollars of revenue at risk across the five companies in the sample that provide some level of quantification). In the words of Frank Elderson (European Central Bank, Executive Board Member):

> *"There are risks to acting on the basis of partial data, but in the case of climate change and environmental degradation, the risks of inaction are far greater."*

The uncertainties associated with nature-related issues may require some investors to adapt existing risk-assessment approaches, including through greater use of scenario, location-specific and qualitative evidence. Specifically, investors will need to:

1. Act on established drivers of degradation. Many of the pressures driving nature loss are already well understood, including habitat conversion, overextraction, and pollution. Depending on their mandate, investment process and confidence in the available evidence, investors may be able to begin exploratory engagement before comprehensive company-level data become available. Capital-allocation decisions may require a higher evidentiary threshold. Waiting for disclosure to mature before acting risks delaying responses to risks that are already visible.
2. Treat TNFD alignment as a floor for engagement, not a measure of quality. As our sector findings show, disclosure coverage against the TNFD framework is a weak proxy for the quality of a company's underlying risk and impact management. Investors should use TNFD adoption as a starting point for deeper questions about governance, target credibility, and materiality, rather than treating alignment itself as evidence of good practice.
3. Use gaps in disclosure as a prompt for engagement. Where companies in nature-sensitive sectors fail to disclose on material issues, this absence of disclosures surfaces gaps to be further explored by investors through, for example, engagement activities.
4. Draw on a wider base of evidence than company disclosure alone. Financial supervisors are increasingly clear that precision in risk measurement is not a precondition for action. Investors can support this shift by incorporating qualitative and place-based evidence, including scientific and community expertise, alongside quantitative disclosure. Indigenous knowledge systems can, in some cases, provide forms of ecological understanding that may not be fully captured by conventional financial data, and are already being used by some market participants to help ground-truth other sources. Expanding and resourcing this kind of evidence, rather than treating it as a supplement of last resort, will be an important part of building the more holistic risk picture supervisors are calling for.

Meeting these expectations requires investors to look beyond company disclosures to the broader systems that produce, verify, and circulate nature-related information. In the following sections, we examine the nature data landscape underpinning disclosure, including the tools, providers, and tensions shaping how investors access and use this information, before turning to the collaborative initiatives investors are using to coordinate engagement and share knowledge across the market.

21 NGFS, French Central Bank.

22 Crona et al., (2021). The Anthropocene Reality of Financial Risk. ***One Earth***. 4(5), 618–628. https://doi.org/10.1016/j.oneear.2021.04.016

6 Nature-related Data Developments



Photo: iStock

Our nature disclosure assessment showed that across sectors, companies have made clear progress in aligning with the TNFD framework, particularly in governance, scenario analysis, and the use of approaches such as double materiality and LEAP.

Leading firms are now providing more detailed and location specific disclosure on nature-related dependencies, impacts, and risks, and in some cases are beginning to integrate these into enterprise risk management and strategic planning.

Looking ahead, a significant challenge that companies and investors face in further progressing to the real-world management and mitigation of nature impacts and risks, lies in the data on which disclosures depend. This challenge extends beyond the availability of information about nature impacts and financially material risks, which on its own is a formidable gap. Nature data must meet the diverse needs of investors and companies, whilst grappling with the complex, dynamic, nature of ecological systems. Nearly half of the companies in our 2026 sample explicitly stated in their disclosures that data limitations impacted their ability to set targets (particularly for activities outside the direct scope), calculate and forecast financial risks, and accurately quantify their nature footprints.

Taking a holistic approach, in this section we broaden our focus to examine the data landscape underlying company disclosures. Drawing on interviews and desktop research, we explore the developments, challenges, and emerging opportunities shaping the nature data ecosystem, and what they mean for the ability of investors and companies alike to move from reporting on nature to managing the risks from its decline and financing its repair.

Nature-related data developments: summary

Investor demand for decision useful, financially material nature data is accelerating, but the tools, skills, and corporate behaviours needed to meet that demand are still catching up. This section of the report integrates a literature review of the nature data ecosystem with a thematic analysis of key tensions and opportunities, based on interviews with stakeholders in the nature data ecosystem, providing investors with a consolidated view of where the market stands and what is needed to advance it.

Nature-related data and its uses continue to evolve and improve. There are many trusted sources of nature data and company disclosure has progressed significantly, largely due to TNFD adoption.

Across seven key tensions, however, a consistent pattern emerges: data investors need to act is often either unavailable, unverifiable, inaccessible, or beyond the interpretive capacity of the teams tasked with using it. Data providers, responding to demand, are developing sophisticated tools to address gaps, while investors are also turning to market intermediaries with company-level intelligence to provide more granular insights.

Location specificity remains the central bottleneck. Regional risk probabilities and sector-level footprinting can support initial screening, but on their own may be insufficient for some investment decisions or detailed company engagement. Technology, particularly AI, is simultaneously the most promising development and the most contested, enabling analysis at previously unimaginable scale while introducing new trust problems the market is only beginning to resolve.

The nature-related data landscape

Types of nature-related data

There is no universally agreed categorisation of nature-related data types.[23] At the highest level, data may be split into two broad categories:

- Data about nature—e.g. data about biodiversity, ecosystems, and protected areas.
- Data about company/organisation interactions with nature—e.g. nature dependencies, pressures (or impact drivers), and impacts from operations and supply chains.

Data can be further categorised by its features, such as whether it is spatial or temporal, and by how it is generated (e.g. observed, modelled, forecast, disclosed). [24]

Investors are specifically interested in data spanning five domains:

- **Dependencies**—natural assets and ecosystem services that organisations rely on (e.g. water).
- **Pressures or impact drivers**—use of natural resources and release of substances that lead to impacts (e.g. water pollution).
- **Impacts**—changes to nature, positive or negative, due to impact drivers (e.g. damage to an ecosystem from pollution).
- **Nature-related risks**—risks to an organisation due to its nature dependencies and impacts (e.g. regulatory fines).
- **Nature-related opportunities**—opportunities for an organisation that benefit nature.

Underpinning this data, investors need detailed location-specific data about company assets.

First Sentier Investors' Nature and Biodiversity Toolkit (ICANN)[25] recommends that investors assess nature issues by prioritising data across broad layers: from sectoral materiality through to country-level, sector-level, and company-level data (including nature-related metrics, location-based asset data, and commodity revenue data), as well as investor exposure data. Data not directly nature-related, such as human rights data, may also be integrated where sustainability issues interact.

Types of data provider and outputs

The TNFD has identified three broad groupings of nature-related data providers:[26]

- Primary nature data collectors, including scientific institutions and citizen scientists.
- Secondary data providers who aggregate nature data and serve many data users and use cases.
- Product and service providers with nature data offerings, including market data providers, rating agencies, index providers, and intergovernmental agencies.

Raw data is generated from sources such as satellite imagery or environmental sensors, processed and cleaned by providers, and then aggregated in data repositories. Users access data through services, providers, or platforms for assessment and decision-making. Within the product and service provider category, TNFD identifies market intermediaries including data and analytics service providers, large consulting companies, and small advisory firms. Outputs span datasets, tools, products, and services, some freely available, others commercial. TNFD's nature-related Tools Catalogue listed 238 tools as at February 2026.

How investors use nature-related data

Investors may source and use nature-related data in a variety of ways, depending on their investment mandate, type (asset owner or manager), and approach to sustainability and nature issues. Typical use cases include:

- **Screening** for nature-related risks in portfolios
- **Identifying** nature-related opportunities
- **Identifying** companies with nature-related risks for engagement
- **Comparing** companies based on management of and exposure to nature risks (e.g. deforestation)
- **Supporting** integration with other sustainability issues, such as climate change
- **Supporting** TNFD or other nature-related disclosures.

23 Storebrand (2025) *Integrating Nature Data Into Investment Decisions*
24 Storebrand (2025) *Integrating Nature Data Into Investment Decisions*
25 First Sentier (2023) *Investors Can Assess Nature Now NATURE AND BIODIVERSITY TOOLKIT*
26 TNFD (2025) *Recommendations for upgrading the nature data value chain for market participants*

Investors who screen for nature risks may rely solely on products from sustainability and nature-related data providers, while those who engage with companies may apply structured analytical approaches using a range of data sources. Others apply a more bottom-up approach through direct engagement with investee companies Investors may also integrate nature-specific data with other company risk data sources.

The free online ENCORE tool is widely used to support TNFD disclosures, enabling investors to screen portfolios for nature-related dependencies and pressures at a sectoral level. A recent study[27] found that investors use ENCORE to support: heatmapping of nature dependencies and pressures; assessment of asset-level risks through integration with location-based tools; and translation of impacts and dependencies into risks and opportunities.

Key themes: the demand for decision-useful data

From broad assessments to financial causality

Engaged investors require different types of data to meet different needs. High level footprinting is useful to identify priority companies, sectors, and supply chains, but lacks the specificity to support the pricing of nature-related risks and opportunities into financial decision making. To establish financial causality, location-specific data that can link activities at the asset level to impacts and dependencies "on the ground" are needed. This limitation is reinforced by Benetto et al., (2025)[28] who similarly observe that existing frameworks fail to adequately capture causal links between company impacts and biodiversity, which is what financial risk assessments require.

Interview participants noted that the following data types may be insufficient when used alone for detailed engagement, asset-level analysis or valuation:

- High level spatial overlays
- Regional and sector level risk estimates ('guestimates')
- Biodiversity footprinting, especially those underpinned by sector level economic data
- Company sustainability scores and ratings.

In their place, engaged investors need:

- Granular, location specific asset and supply chain data
- Company-specific analysis that can support engagement, risk prioritisation, and (eventually) valuation
- Company reported data at the income statement, cash flow, and risk levels.

Data providers are investing in sophisticated nature data products to meet this demand, including: Nature Value at Risk (to calculate financial risk exposure from ecosystem degradation); discounted cash flow integrations and real time nature-related controversies monitoring; granular geospatial overlays of assets and facilities linking nature pressures to specific sites; supply-chain mapping (particularly for forest-risk commodities); AI with human-in-the-loop integrations; and "Bring Your Own Data" (BYOD) offerings allowing organisations to upload their internal or propriety data alongside external nature data sets for custom analysis.

> *These developments will help transition the industry from broad, conceptual assessments toward actionable financial analysis and robust company engagement, and support investors to meet reporting requirements under TNFD.*

27 Global Canopy (2025) *How financial institutions use ENCORE to assess dependencies and impacts on nature*

28 Benetto, E., Busch, T., Verones, F., & Wood, R. (2025) ***Biodiversity finance: Measuring and managing biodiversity in companies and financial markets***. Journal of Industrial Ecology, 29(5), 1450–1457

Diverse Investor Use Cases

Nature data needs vary significantly based on institutional type, market, and user context. The table below summarises how different investor types use nature data.

Table 1 Nature data use by group

Group	User type	Examples	How they use nature data
By market	**Public market investor**	Large, diversified funds, sovereign wealth funds, index managers	Broad biodiversity footprinting across thousands of holdings to monitor systemic risk.
	Private market investor	Venture capital firms, private equity funds	Detailed site-level analysis on a handful of companies to identify value creation opportunities.
By capacity	**Large institution**	Major asset managers, global investment banks	Buy raw data in bulk and build it into proprietary internal scoring systems and APIs.
	Small team	Boutique managers, lean sustainability teams	Rely on ready-made models, such as Nature Value at Risk, that convert complex science into usable financial figures.
By role	**Asset owner**	Pension funds, endowments, insurance companies	Build a sector-level house view to benchmark and challenge the nature strategies of their external managers.
	Asset manager	Fund managers, investment houses	Produce granular company-level research to demonstrate how nature is integrated into client mandates.
	Broker	Large investment banks with research divisions	Deliver bespoke, high-touch notes on a single material asset, overlaying nature risk with specific dollars at stake.



Photo: iStock

Challenges and data gaps

Despite the plethora of data providers, datasets, and tools, investors still lack adequate data to support nature-based risk and opportunity assessment.[29] Granular locational data at the asset level and at the nature issue level (e.g. species-level data for biodiversity)[30] is often missing.

A 2025 study of tools listed on the TNFD and SBTN tools catalogue[31] found that despite a proliferation of tools, many were of questionable usefulness for their stated purpose — helping companies with disclosure or target setting. Key findings included:

There was a lack of transparency around data sources and what tools would provide.

A small number of the more useful tools sourced their species data from the same sources — the Integrated Biodiversity Assessment Tool (IBAT), the IUCN Red List of Threatened Species, and the Key Biodiversity Areas (KBA) databases. Three tools used species locational data from the Global Biodiversity Information Facility (GBIF). The study authors called for an independent classification of tools and concluded that a focus on improving the robustness of existing tools would provide better outcomes than further proliferation. Between February 2024 and February 2026, the number of tools in the TNFD catalogue grew from 96 to 238.

As well as availability, there are challenges with accessing, interpreting, and applying data. Nature data covers multiple issues and metrics, and its usefulness can be compromised by transparency and provenance issues, as well as quality and format concerns.[32] A study on asset-level data found reasonable data availability for sectors such as mining and power, but poor coverage for sectors with high nature dependencies — including agriculture, forestry, and fishing.

29 Christiaen, C., Lockwood, P., Jackman, A., & Caldecott, B. (2025). Location, location, location: asset location data sources for nature-related financial risk analysis. Current Opinion in Environmental Sustainability, 74, 101527

30 Constantino-Panopio, C., de Silva Pandithasekera, R. M. H., Nyandire, N. O., Rahman, S. C., McKee, E., Nelson, H., Bennun, L., & Plumptre, A. J. (2025). An evaluation of tools being promoted to help the private sector disclose its impacts on biodiversity. Conservation Science and Practice, 7(12), e70198. https://doi.org/10.1111/csp2.70198

31 Constantino-Panopio, C., de Silva Pandithasekera, R. M. H., Nyandire, N. O., Rahman, S. C., McKee, E., Nelson, H., Bennun, L., & Plumptre, A. J. (2025). An evaluation of tools being promoted to help the private sector disclose its impacts on biodiversity. Conservation Science and Practice, 7(12), e70198. https://doi.org/10.1111/csp2.70198

32 Storebrand (2025) *Integrating Nature Data Into Investment Decisions*

Seven key tensions

The complexity and spatial/temporal heterogeneity inherent in nature-related issues, contrasted with the relatively immature state of the current nature-data landscape, reveals seven key tensions:

1. Location, location, location
2. Diverse investor use cases
3. Nature is no climate
4. Companies lack incentive to disclose
5. In AI we (can't) trust
6. Knowledge and skill gap
7. Opaque methodologies

Each is examined below with associated challenges and opportunities.

Tension 1: Location, location, location

Challenges

- High-level spatial overlays provide only risk probabilities for a broad region—useful for starting a dialogue but insufficient for deep engagement or investment shifts.
- Geospatial nature data for company impacts is often estimated by third parties; companies may dispute findings, impeding investor progress.
- Only a tiny minority of companies provide location data in machine-readable GIS or shapefile formats, making portfolio-wide integration effectively impossible.
- Different methodologies produce conclusions that are "all over the place," leading to a lack of confidence in portfolio-wide risk assessments.
- Supply-chain visibility and data is poor, especially beyond Tier 1, and is often modelled using indicative Input-Output/Lifecycle analysis approaches.
- Core scientific datasets (IBAT, WWF, BirdLife, IUCN, ESA) have significant limitations in timeliness, resolution, global coverage, and accessibility.
- Sectoral tools such as ENCORE, IBAT, and EXIOBASE are not activity-specific and struggle to capture value chain dynamics or project future trajectories.[33]
- Nature data often requires substantial engineering before it can be usefully integrated—a high cost for non-large organisations and for mandatory disclosure.

Opportunities

- Improvements in granular location data are enhancing capacity to identify exactly how many assets are in high-risk areas and quantify specific "dollars at stake."
- New widgets and datasets are emerging that allow investors to "click into" supply chains, particularly for forest-risk commodities.
- Technological advances allow triangulation of multiple data sources (satellite imagery, IoT, and Indigenous community data) to achieve higher ground-truthing.
- Growing opportunity to pair location-specific data with technical experts (ecologists, academics) during company dialogues as a "scientific voice of reason."
- Academic methodologies combining life-cycle assessment with multi-regional input-output modelling are starting to close the activity-specific gap, tracing biodiversity impact through global supply chains down to individual holdings.[34]

33 Cziesielski, M., Dekker-Hufler, C., & Pal, T., et al. (2024) ***Study for a methodological framework and assessment of potential financial risks associated with biodiversity loss and ecosystem degradation***. European Commission, as cited in Benetto et al. (2025), Journal of Industrial Ecology, 29(5), 1450–1457.

34 Kulionis, V., Pfister, S., & Fernandez, J. (2024) ***Biodiversity impact assessment for finance***. Journal of Industrial Ecology, 28(5), 1321–1335

Tension 2: Diverse investor use cases

Challenges

- Depth v Breadth Conflict: Public market investors need data that scales across thousands of holdings; private market investors need granular, asset-level analysis. The same dataset rarely serves both.
- Builder v Buyer Advantage: Large institutions can build proprietary scoring systems; smaller teams need decision-ready metrics. Products pitched in the middle risk serving neither well.
- Finding a "One Size Fits All" metric: Nature risk spans water, soil, biodiversity, and deforestation—no single dataset covers all dimensions with equal depth.

Opportunities

- AI-driven customisation: Large language models are enabling providers to run bespoke investor expectations against large portfolios in days.
- Financialised metrics and co-creation: Providers are translating complex nature science into decision-ready financial outputs, from co-created datasets for large institutions to ready-to-use metrics like Nature Value at Risk for smaller teams.
- "Bring your own data" models and interactive supply chain widgets allow investors to apply provider methodologies to their own datasets.
- Resource-constrained investors are increasingly pooling efforts through aggregator platforms that can represent many investors simultaneously.

Tension 3: Nature is not climate

Challenges

- Nature spans diverse dimensions (water stress, soil health, biodiversity, forest risk) that cannot be distilled into a single universal metric the way carbon can.
- Regional risk probabilities are a starting point but insufficient for meaningful engagement, which requires asset-specific location data.
- Nature data is often estimated by third parties, unlike carbon data typically reported directly by companies, giving companies grounds to dispute findings.
- Nature responsibilities are frequently tagged onto existing climate teams who lack ecological expertise to interpret complex data or speak confidently to boards.
- Many nature datasets rely on backward-looking snapshots from the 2010s, conflicting with financial sector expectations of current, real-time information.

Opportunities

- Moving toward "Nature Value at Risk" allows investors to connect site-level ecological risk directly to income statements, cash flows, and cost of capital.
- AI-driven triangulation of satellite imagery, IoT, and supply chain data enables a higher level of ground-truthing.
- TNFD builds on familiar climate frameworks like ISSB, providing a bridge toward site-specific disclosure without requiring investors to start from scratch.
- Including scientific experts in engagement meetings helps verify corporate claims and fills the technical expertise gap within investment teams.

Tension 4: Companies lack incentive to disclose

Challenges

- Companies are incentivised to report on low-risk, visible sites while obscuring higher-risk sourcing locations linked to commodities like palm oil, beef, or timber.
- A first-mover problem persists: companies see disclosure as absorbing costs that peers avoid, with no regulatory compulsion and limited commercial incentive.
- Even when companies do disclose, data is typically provided in tables of names rather than machine-readable GIS formats, making portfolio-wide integration effectively impossible.
- A cross-country study of 2,843 corporate sustainability reports found that the quality of biodiversity-related disclosure declined after 2015 despite rising recognition of biodiversity as a material topic, indicating companies are not closing the gap voluntarily.[35]

Opportunities

- TNFD adoption and its integration into global standards such as IFRS is expected to drive more consistent and comparable corporate disclosure over time.
- The absence of disclosure is itself informative—a water-intensive company that fails to report on water use becomes a red flag for targeted engagement.
- "Bring your own data" models allow companies to share site-specific information for professional quantification, creating a collaborative incentive for disclosure.
- Increasing data-sharing collaboration e.g. the Overture Maps Foundation[36] founded by Amazon, Meta, Microsoft and TomTom to create global, interoperable and open map data – reflects growing willingness to invest in nature data.

Tension 5: In AI we (can't) trust

Challenges

- Investors struggle to understand how AI-driven providers reach their conclusions, making it difficult to distinguish rigorous analysis from poorly modelled outputs.
- AI systems are only as good as their inputs; where the underlying nature data is flawed, errors are scaled rather than resolved.
- Investors face a difficult trade-off between transparent but high-level data and granular but opaque AI-generated products.
- There are concerns around provenance and insufficient validation with robust ground-truthing when data sources are combined using AI, a risk of becoming more of a "black box."

Opportunities

- Large language models can process corporate disclosures at previously unattainable scale—thousands of companies across millions of documents in weeks.
- Combining supply chain data, satellite imagery, IoT sensors, and corporate disclosures through AI allows faster and more reliable ground-truthing of company claims.
- A "human in the loop" model, where AI handles efficiency and human analysts provide oversight, is emerging as the practical solution to the trust gap.

35 Bassen, A., Buchholz, D., Lopatta, K., & Rudolf, A. R. (2025) ***Assessing biodiversity-related disclosure: Drivers, outcomes, and financial impacts***. Journal of Industrial Ecology, 29(1), 311–329

36 Overture Maps Foundation (N.D.) ***About***

Tension 6: Knowledge and skill gap

Challenges

- Nature responsibilities are frequently added to existing climate teams without the ecological expertise to interpret outputs meaningfully.
- Without scientific intuition, methodologies can produce perverse outcomes, for example, a biodiversity fund identifying a major fast-food chain as a top holding.
- Complex metrics such as PDF or the Biodiversity Intactness Index are frequently misunderstood or misapplied.
- A lack of confidence prevents investors from engaging authoritatively with corporate boards; dialogues often stall at a request for more disclosure.
- Financial institutions are further constrained by a historical lack of expertise, methodologies, and data to identify, assess, and manage biodiversity-related dependencies.[37]

Opportunities

- Translating ecological concepts into financialised metrics—connecting nature risk to income statements, cash flows, and distributed cashflow models—helps sustainability teams communicate risk in language that resonates with boards.
- Some institutions are actively recruiting ecologists and biologists, bringing scientific expertise directly into investment teams.
- Collaborative initiatives such as Nature Action 100 provide peer learning, helping investors understand best practice across different markets and sectors.



Photo: iStock

37 Mundaca, L., & Heintze, J. N. (2024) ***Banking on ecosystem services***. Ecological Economics, 224, 108284, as cited in Benetto et al. (2025), Journal of Industrial Ecology, 29(5), 1450–1457

Tension 7: Opaque methodologies

Challenges

- Different data products assessing the same portfolio frequently produce conclusions that are "all over the place", a clear signal of methodological immaturity.
- Approaches like biodiversity footprinting can give users false confidence, presenting crude proxies as though they represent comprehensive, reliable models.
- No meaningful framework exists for policing or sifting through the metrics that companies and providers claim to use.
- There is no equivalent of the GHG Accounting Protocol for nature, for example, no standardised methodology for calculating water consumption, making it difficult to invest globally in nature data or support comparability.
- No single method simultaneously accounts for the full range of biodiversity pressures, ecosystem types, and taxonomic groups relevant to impact assessment, and a review of 19 leading corporate biodiversity metrics found significant methodological variation between them.[38, 39]

Opportunities

- Open-source efforts to develop shared public datasets, such as Nature Value at Risk, are creating a collaborative path toward agreed methodological standards.
- AI-driven platforms allow investors to bypass provider methodologies entirely, running their own internal benchmarks against large portfolios.
- "Bring your own data" models let investors and companies align on a shared analytical baseline, removing the black box from the process.
- Engagement with academia is helping build market consensus on methodological best practice, lowering the barrier for consistent corporate disclosure.
- The Nature Positive Initiative and World Business Council for Sustainable Development are leading an initiative to develop a Nature Measurement Protocol, building on the GHG Protocol to provide standardised methodologies and tools for nature accounting.
- New tradable-credit metrics link an organisation's biodiversity footprint mathematically to global extinction risk, offering a route toward science-based, comparable targets.[40]

38 Damiani, M., Sinkko, T., Caldeira, C., Tosches, D., Robuchon, M., & Sala, S. (2023) ***Critical review of methods and models for biodiversity impact assessment and their applicability in the LCA context***. Environmental Impact Assessment Review, 101, 107134

39 Kennedy, S., Fuchs, M., van Ingen, W., & Schoenmaker, D. (2022) ***A resilience approach to corporate biodiversity impact measurement***. Journal of Industrial Ecology, 32(5), 2567–2582.

40 Rossberg, A. G., O'Sullivan, J. D., Malysheva, S., & Shnerb, N. M. (2024) ***A metric for tradable biodiversity credits quantifying impacts on global extinction risk***. Journal of Industrial Ecology, 28(4), 1009–1021.

Developments and trends

Demand-driven trends

Key demand-driven trends are noted in the previous section. In summary, mandatory and voluntary reporting is driving the need for standardisation in nature data, and this trend is expected to continue as reporting standards further converge. Demand for granular and specific location-level, asset-level, and supply-chain data is also growing as financial institutions develop more sophisticated approaches to nature-related risk and opportunity assessment. Demand is coming from a spectrum of stakeholders. The Green Building Council of Australia's ***Nature Positive Roadmap for the Built Environment (March2026***[41]***)*** highlights the growing emphasis on strengthening nature-related data, calling for consistent, decisionuseful metrics and improved access to spatial and ecological information to support credible disclosure and action across the built environment.

Core nature data providers, including governments are responding to this demand with development of tools and resources. PLANR (the Platform for Land and Nature Repair), for example, is an Australian Government–funded, online geospatial tool that helps landholders plan, cost and assess biodiversity and carbon projects by mapping natural assets and estimating environmental outcomes. It also connects landholders with buyers and investors through a marketplace to support participation in the Nature Repair Market and other environmental markets.[42]. Government provided national data infrastructure, such as the recently established Environment Information Australia and the Biodiversity Data Repository respond to the demand for more standardised, measurable and comparable nature-related data for reporting, investment and planning decisions.

Technology-driven trends

Technology-driven approaches, "nature tech", for species and habitat monitoring and natural capital assessment continue to advance. Key areas of development include:

- Use of AI for enhanced spatial modelling, including AI-supported mapping of habitat and ecosystem services, AI enhancement and analysis of satellite imagery, and integration of multi-source spatial datasets.
- Integration of ecological expertise with machine learning in tools like PeatSCOPE, a spatial nature tool providing AI-generated peatland condition layers across biogeographical zones.
- Use of drones, LIDAR (light detection and ranging), and remote sensing to provide more granular, timely, and scalable data.
- Bioacoustic monitoring that listens to ecosystems continuously with automated AI analysis, giving real-time data on species and habitats and enabling long-term passive monitoring at low cost.
- Advancement of environmental DNA (eDNA) and RNA technologies combined with AI analysis. Companies like NatureMetrics are transforming biodiversity monitoring by analysing DNA traces in soil, water, and air, enabling rapid, non-invasive, and standardised assessment of species richness.

Open access and data infrastructure

A major initiative, supported by the TNFD and United Nations Development Programme (UNDP), is the proposal for a global, open-access Nature Data Public Facility. This facility would aim to provide free, standardised nature data, removing cost barriers for SMEs and improving data consistency. TNFD proposes that nature data must shift from today's patchwork of variable-quality, hard-to-access datasets toward a globally coordinated, principles-based, interoperable system. This requires:

- Shared nature data principles and standardised metadata.
- Harmonised licensing and user agreements along value chains.
- Nature data measurement protocols and a universal digital protocol for sharing nature data across supply chains.

TNFD also calls for an international Nature Data Trust to treat state-of-nature data as a strategic global public good, unlock corporate-collected data, and generate long-term funding for collecting, updating, and improving foundational nature data. Overall, nature-related data must become more open, reliable, machine-readable, connected, and sustainably financed to meet growing market and regulatory needs.

41 Green Building Council Australia (2026) *Nature positive roadmap for the built environment: Trajectories for new developments*

42 Department of Climate Change, Energy, the Environment and Water, *Helping landholders plan projects, improve environmental outcomes and access nature markets*

Key Takeaways for Investors

Theme	Description
Prioritise location data	High-level footprinting and regional risk overlays are useful for initial screening but are unlikely to be sufficient for financial decision-making or meaningful corporate engagement. Treat location data as a prerequisite, not a premium.
Match data to use case	There is no universal nature dataset. Selecting data tools based on institutional capacity and investment mandate will produce more actionable results.
Broaden the Evidence Base	Nature data increasingly draws on Indigenous and community knowledge alongside satellite imagery and other technical sources for ground-truthing. Where relevant, this evidence can provide a valuable input to decision-making and may complement conventional data rather than serving solely as an occasional supplement..
Maintain human oversight of AI	AI tools offer genuine efficiency gains, but outputs should not be treated as reliable without human oversight. Prioritise providers who are transparent about their methodologies.
Invest in scientific literacy	Existing climate teams may require additional ecological expertise, training or external support to assess nature-related issues effectively. Investors who lack ecological expertise will struggle to engage credibly with companies or interpret data outputs correctly.
Demand methodological transparency	Significant variation exists between products claiming to perform equivalent functions. Interrogate the assumptions, proxies, and data sources underpinning any nature score or risk model.
Plan for market maturation	Build flexibility into data strategies, combining multiple tools where necessary, and treating current outputs as directional while the market catches up.

Key Insights and Conclusions

The nature-related data landscape is expanding rapidly in response to growing investor demand, but remains at an early stage of maturity. The core challenge is no longer solely the availability of data, but its fitness for purpose. While a wide range of tools and datasets now exist, many remain too high-level, inconsistent, or modelled to support robust decision-making. Reliance on proxies and models creates an inherent tension between simplicity and scientific credibility, and highlights the risk of false precision in nature-related analysis.

> *A clear shift is underway toward granular, location-specific and asset-level data that can link nature-related impacts and dependencies to financial outcomes.*

However, limited availability of such data, particularly across supply chains, continues to constrain both investor analysis and company disclosure. Location specificity therefore remains the central bottleneck in advancing decision-useful insights.

Technological advances, including AI and geospatial analytics, are helping to address gaps by enabling more sophisticated analysis at scale. However, they also introduce new challenges around transparency, trust, and the interpretability of outputs. In parallel, many investors continue to face internal constraints, with limited capability to interpret and apply complex nature data effectively. Progress is evident, but the ability to translate data into decision-useful insight remains constrained by gaps in quality, consistency, and capability.

Looking ahead, the next phase will depend less on the proliferation of new tools, and more on improving data quality, interoperability, and transparency, as well as strengthening investor capability. This will require a shift from seeking universal metrics toward more flexible, context-sensitive approaches that combine multiple data sources, including qualitative and place-based evidence such as Indigenous and community knowledge, and that require collaboration to assemble. Ultimately, the effectiveness of nature-related data will be judged by its ability to support credible decision-making and underpin measurable real-world outcomes.

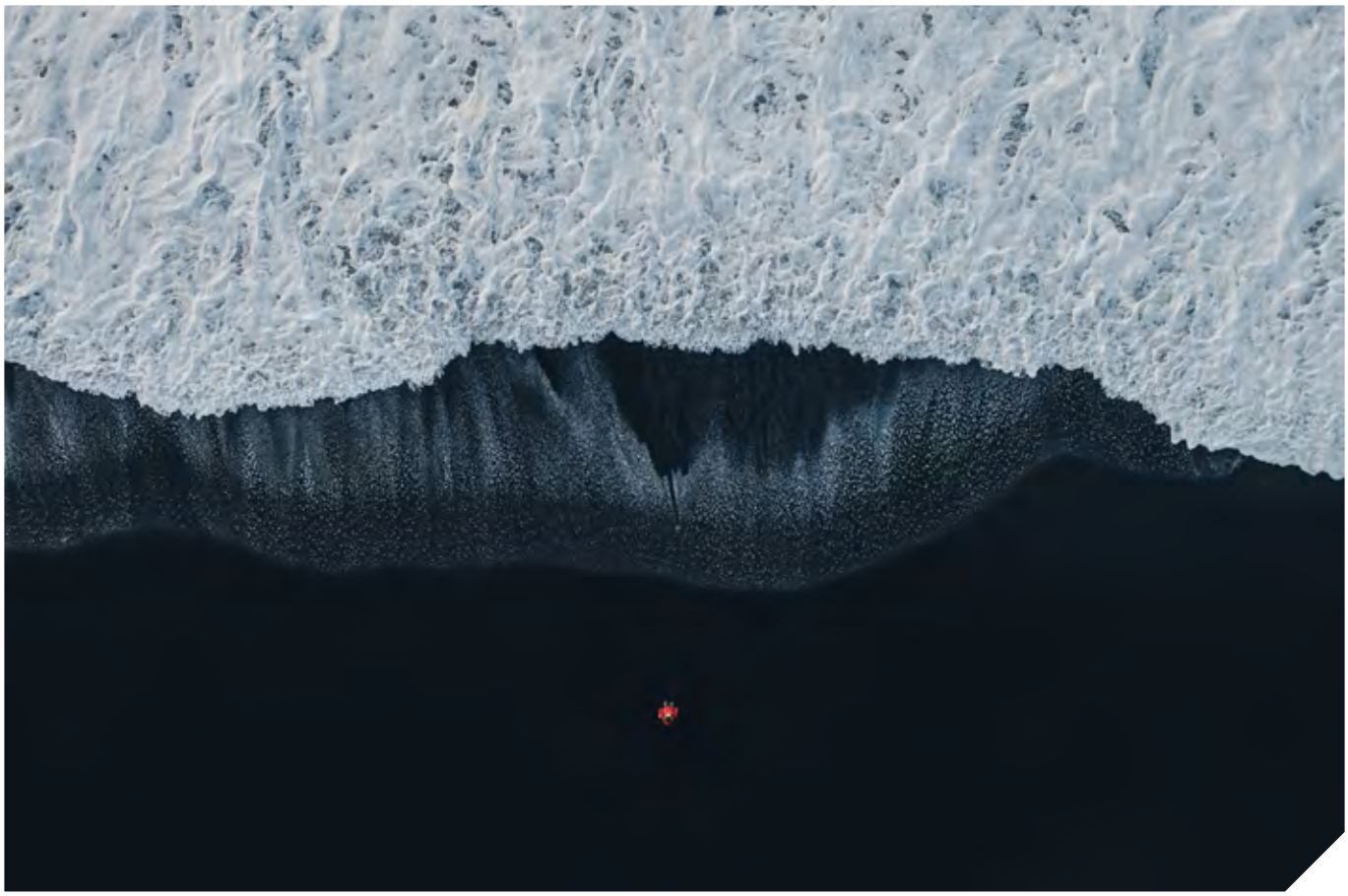


Photo: iStock

7 Nature-related Collaborative Initiatives



Photo: iStock

The analysis of the nature-related data ecosystem underscores a market in transition. Investor demand for decision useful, financially material data is accelerating, but the infrastructure required to support this demand is still maturing.

Persistent gaps in data availability, quality, and accessibility, particularly for location specific and supply chain data, limit the ability of investors to price risk, compare performance, and allocate capital with confidence. Rapid growth in tools and technologies is creating both opportunities and new challenges, including issues of transparency, comparability, and trust.

These constraints reinforce the inherently systemic nature of biodiversity risk. No single investor, company, or data provider can resolve these challenges in isolation. This has driven the expansion of collaborative initiatives aimed at improving disclosure practices, developing shared expectations, and strengthening collective engagement with companies and policymakers.

Nature-related collaborative initiatives

Overview

Collaborative initiatives bring together a range of investors to incorporate diverse perspectives and more effectively create collective action (George, D., Christie, I., & Wehrmeyer, W. (2025)). Other stakeholders such as non-government organisations, intergovernmental organisations, academia and industry may also be involved. Collaborative engagement can be used for various stewardship activities including company engagement, policy advocacy, sectoral and value chain engagement and even education and awareness raising.

Currently there are around 19 active investor collaborative initiatives on nature globally (See Table 2). These initiatives cover sectors such as agriculture, transport, chemicals and consumer products. Their functions range from encouraging investee companies to: improve nature-related disclosures, set and disclose progress against targets, develop transition plans, mitigate deforestation-related risks, improve transparency across their supply chains, and meet best practice standards. Initiatives range in size, with the largest initiatives bringing together more than 240 investors with assets under management of US$30 trillion. In the following sections we present insights developed based on interviews conducted with investment professionals who are active members of at least one nature-related investment collaboration. Through these interviews we aimed to uncover the motivations that drive investors to become members of collaborations, explore the current and anticipated benefits of these initiatives, including what success looks like, and highlight the challenges that members face in convening and governing collaborations towards their intended goals.

Table 2 Summary of nature-related collaborative initiatives

Name and year of inception	Lead and participants	Description[43]	Outcomes
Food Emissions 50 (2021)	**CERES** Investors	Engaging the 50 highest-emitting food companies in North America on climate disclosures, targets and transition plans.	Annual benchmarking report of target companies, with overall progress in 2025.
Deforestation Action Group (2026)	**IIGCC** Investors	Continuation of the Finance Sector Deforestation Action initiative to mitigate financial risks related to deforestation, ecosystem conversion and associated human rights risks in investor's portfolios.	Guidance on Integrating Deforestation into Net Zero Strategies (forthcoming)
IEHN Working Group for Pesticide Reduction and Biodiversity (2018)	**Mercy Investment Services and IEHN** Investors	Engages companies to disclose and reduce pesticide dependence, adopt biodiversity protection strategies, and accelerate the transition to safer, more sustainable agricultural practices.	Development of metrics and engagement expectations to track and assess portfolio vulnerability associated with use of highly hazardous pesticides
Seafood Traceability Engagement (2023)	**FAIRR** 45 investors (US$9.6 trillion AUM), UNEP, Planet Tracker, World Benchmarking Alliance	Bringing key seafood sector investors together to engage in dialogues with seven of the largest global seafood companies.	Phase 1 established an assessment framework for companies' disclosures. Letters sent to each of the companies, dialogue with six companies.
Biodiversity loss from waste and pollution (2022)	**FAIRR** Phase 1, 80 investors (US$23 trillion AUM) Phase 2, 71 investors (US$16.6 trillion AUM)	Focuses on waste and pollution, as a key driver of biodiversity loss. Targets 10 of the largest publicly listed pork and poultry producers, plus two fertiliser producers.	Initial assessment of the 10 companies (Phase 1).
Satellite-based engagement on no deforestation (2021)	**Cardano, supported by Sat-intelligence** Investors (€1.8 trillion AUM)	Use satellite data and AI to map companies' deforestation and use this to engage companies aiming for zero deforestation by 2030.	None listed
Investor Working Group for a Deforestation-Free Automotive Industry (2022)	**Storebrand AM, Columbia Threadneedle, Rainforest Foundation Norway** Investors	Engages 15 companies on deforestation risks stemming from the use of leather (for car seats) and rubber (for tires).	Initial scorecard on target companies, report on the deforestation risk of the European car industry.

43 The descriptions of the initiatives aim to reflect how the collaborations characterise their own objectives

Name and year of inception	Lead and participants	Description	Outcomes
The Investor Initiative on Responsible Nickel Supply Chains (2024)	**Rainforest Foundation Norway, the Dutch Association of Investors for Sustainable Development (VBDO)** Investors (US$4.5 trillion AUM), NGOs	Focus on the sustainability dimensions of nickel supply chains in the Electric Vehicle (EV) sector. Engaging 28 global automakers and EV battery producers.	31 investors signed a joint statement.
Investor Initiative on Hazardous Chemicals (2023)	**Aviva, Storebrand AM, ChemSec** 80 investors (US$23 trillion AUM or AUA)	Aims to reduce the adverse impacts of hazardous chemicals and members' exposure to associated financial risks. Members engage with 50 of the world's largest publicly traded chemical companies.	Annual company benchmarking, some progress in 2025 from 2024 scores (although target company sample has reduced).
Investor engagement campaign on the Pesticides industry (2023)	**ShareAction** Investors	Aims to address the immense risks to biodiversity posed by the pesticides industry. Focuses on global pesticides players, BASF, Bayer, FMC Corporation, Syngenta, Corteva and UPL.	Initial assessment of 6 largest pesticide companies' approach to biodiversity loss
Investor Collaboration Marine Microplastic Pollution (2020)	**First Sentier and Marine Conservation Society** 30 investors	Encourage domestic and commercial washing machine manufacturers to add filter technology as standard to all new washing machines produced by the end of 2023.	Policy advocacy with the UK, Australian and EU Governments, microplastic pollution report
Valuing Water Finance Initiative (2022)	**Ceres** 30 investors (US$18 trillion AUM)	Aims to engage 71 companies with a large water footprint to value and act on water as a financial risk and drive the necessary large-scale change to better protect water systems.	Biannual company benchmark reports for 71 companies show that between 2023 and 2025 48 company scores have improved, 20 have declined.
Nature Action 100 (2023)	**Ceres, IIGCC, FfB Foundation, Planet Tracker** 240+ investors (US$30 trillion AUM)	Aims to mobilise institutional investors to establish a common high-level agenda for engagements and a clear set of expectations to drive greater corporate ambition and action on nature and biodiversity loss. Targeting 100 companies across eight sectors.	Initial company benchmarking in 2024 which measures progress overall and by company. Document outlining Nature 100 investor expectations for companies
The BRIDGE project (2023)	**Deltares, WWF, Achmea, NN, SCOR** Investors, NGOs	Aims to deepen the understanding of water-related risks and encourage a shift in how investors understand and consider water-related risks.	Research report on enhancing water-related sustainability data

Name and year of inception	Lead and participants	Description	Outcomes
Biodiversity and Natural Capital Stewardship Programme (2024)	**Morningstar Sustainalytics** 130 investors (US$4.2 trillion*), policy makers, NGOs	Targets 50 national and multinational companies in the agricultural value chain – from financiers and retailers to traders, agrochemicals and producers.	None listed
Spring: A PRI Stewardship Initiative for Nature (2023)	**PRI** 240 investors (US$18 trillion AUM)	Aims to address the systemic risk of nature loss to societies and long-term portfolio value creation by enhancing corporate practices on forest loss and land degradation.	96 investors participating in company engagements. Annual progress reports
Nature Benchmark Collective Impact Coalition (CIC) (2024)	**World Benchmarking Alliance** Investors, NGOs	Time-bound, group of different organisations with collective influence to transform companies' behaviour.	Companies will be assessed against the WBA's Nature benchmark
Investor Policy Dialogue on Deforestation (2020)	**Storebrand AM, BlueBay Asset Management** 84 investors (US$11 trillion AUM)	Established to engage with public agencies and industry associations in selected countries on the issue of deforestation.	Latest progress report (2020–22) outlines open dialogue with the Brazilian government, informing Indonesian ministries and financial institutions, and actions in consumer countries.
FABRIC (2024)	**Finance for Biodiversity (FfB) Foundation** 16 investors	Aims to address the textile and apparel sector's impacts on nature and seeks to drive biodiversity-positive practices, by engaging 16 global sector leaders.	Investors' expectations for companies' document. Engagement brief on nature

Adapted from Finance for Biodiversity Foundation (2026). Additional sources: Ceres (2026), IIGCC (2026), FAIRR (2026a), FAIRR (2026b), Satintelligence (2020), Cardano (n.d.), Rainforest Foundation Norway (n.d), Aid Environment (2026), VBDO (2025), ChemSec (2026), First Sentier (n.d.), Responsible Investor (2021), Nation Action 100 (2026), IIGCC (2026), Morningstar Sustainalytics (2026), PRI (n.d.), PRI (n.d.) World Benchmarking Alliance (2024), IPDD (2026), FfB Foundation (n.d.) Share Action (2026), Share Action (2023), Morningstar Sustainalytics (2024), NN Group (2023), ChemSec (2025), Ceres (2025)

*(investors engaged in steward-ship services).

Investor experience of collaborative initiatives

Overall, we find that the collaborative initiative space, although seen as critical, faces challenges, that, if not anticipated and properly planned for can limit the effectiveness of initiatives. On this topic, several key findings emerged from our conversations with practitioners. These are explored below.

Strong theoretical value, but slow progress in practice

Collaborative investor action is often viewed as an important mechanism for addressing nature-related risks, given their systemic character and the limited leverage individual investors often have over companies.

Initiatives such as Nature Action 100 offer clear theoretical benefits, including shared learning, international benchmarking, and the potential for greater collective influence. In practice, however, progress has been slower than anticipated. Weak and uneven policy signals on nature, the dominance of climate disclosure on organisational agendas, and the inherently localised and complex nature of biodiversity issues all make it difficult to define clear collective objectives and demonstrate measurable outcomes. The absence of consistent, decision ready metrics further constrains the effectiveness of collaboration.

Unclear benchmarks limit engagement effectiveness

A persistent challenge is the lack of clarity around "what good looks like" in practice. Investors often struggle to provide companies with concrete illustrations of minimum expectations or examples of leading practice when engaging on nature. Clearer benchmarks and comparable standards would support more confident engagement and escalation, particularly if informed by greater input from technical and scientific experts. Without this, collaborative initiatives risk remaining focused on awareness raising rather than driving meaningful change.

Participation does not equal adoption

Resource constraints remain a significant barrier to effective participation, with capacity varying widely by company size, sector, and geography. While many organisations are becoming better informed, far fewer feel enabled to act. Csuite adoption is critical, and depends on confidence in both the robustness of analysis and the organisation's ability to respond. For senior leadership, the value of action on nature—whether in terms of risk management, opportunity creation, or long-term value preservation—must be clearly demonstrated.

Fragmentation risks diluting impact

The growing number of collaborative initiatives focused on nature also presents a coordination challenge. Overlapping mandates and parallel efforts can dilute impact and stretch already limited resources. Sector and value chain-based approaches may be more effective than company by company engagement alone. Landscape level assessments can offer a more realistic way to understand and manage nature-related impacts and stewardship responsibilities at scale. A practical example of how a landscape-level lens can work albeit in a different context, is the Western Australian government's requirement for a cumulative impact assessment (CIA) to be undertaken as part of an environmental impact assessment (EIA) under the Environmental Protection Act 1986. Cumulative impacts are the total environmental impacts of a proposal ***combined*** with one or more past, present or future activities and pressures (such as the operations of other mining companies in the same area).[44]

44 Government of WA Environmental Protection Authority (2026) *Guideline for Cumulative Assessment*

Reframing investor responsibility and systems governance

Corporates and investors may contribute to addressing nature loss, but this may require reframing how fiduciary duty is understood and communicated. While investors are required to act in the best interests of beneficiaries, this is often interpreted narrowly as short-term financial returns for current beneficiaries, rather than long-term value creation for future generations. More globally coordinated approaches to climate and nature, grounded in whole of systems and governance perspectives, are still emerging. Key enabling institutions and data infrastructures, such as GBIF, continue to mature, but are not yet operating at the scale or level of integration required to fully support collective action.

Key Insights and Conclusions

The growth of collaborative initiatives reflects increasing recognition among investors that nature-related risks are systemic and require coordinated action. These initiatives are mobilising significant capital and fostering shared learning, benchmarking, and engagement across sectors and value chains. However, their effectiveness is often constrained by fragmented approaches, unclear benchmarks, and limited evidence of measurable outcomes.

Taken as a whole, the findings across disclosure practice, data development, and collaborative engagement point to a shifting market. For the organisations and initiatives examined in this study, the challenge increasingly extends beyond awareness and participation to the translation of ambition into decision-useful information and measurable outcomes. For investors, this emphasises the importance of moving from passive reliance on disclosure toward active engagement, critical assessment, and continued efforts to shape the evolution of the nature-related reporting landscape.



Photo: nichika-sakurai-XiLVanzeyy4-unsplash

8 Conclusion



Photo: iStock

Since our first review in 2023, nature-related disclosure has become more widespread. The main challenge for investors is becoming less about whether companies report, but whether that reporting, the data behind it and collaborative engagement lead to measurable outcomes for nature.

Looking back across TNFD disclosures, the data landscape, and collaborative engagement initiatives, we find:

1. **Disclosure coverage against the TNFD framework has improved sharply since 2023**, but depth has not kept pace with coverage. All 16 firms in the original 2023 sample now disclose information relevant to each of the TNFD's 14 Core Disclosure Recommendations, up from 56% in 2023. Adoption of the mitigation hierarchy more than doubled, and scenario analysis rose from 0% to 30% of firms. Against this progress, disclosure of the financial impact of nature-related risks remains weak, and reporting on soil, water, and invasive species is still partial at best.

2. **Location-specific, asset-level data remains scarce, particularly across supply chains**. Methodologies for translating impacts and dependencies into financial terms vary widely between providers, which limits comparability. Investors continue to rely on high-level proxies for decisions that increasingly require granularity.

3. **Fragmentation across overlapping collaborations is limiting the combined influence of engagement initiatives**. The absence of shared benchmarks makes it difficult for investors to define what strong company practice looks like or to escalate engagement with confidence. Participation in initiatives such as Nature Action 100 has grown quickly, but our interviews found this has not consistently translated into board-level adoption or measurable outcomes.



Photo: iStock

These findings suggest a clear near-term agenda for investors



1 Act on established drivers of degradation.

Many pressures on nature, including habitat conversion, overextraction, and pollution, are already well understood. Investors do not need comprehensive company-level data to begin factoring these pressures into engagement and capital allocation.



2 Treat TNFD alignment as a floor for engagement, not a measure of quality.

As our sector findings show, disclosure coverage against the framework is not always a strong proxy for the quality of a company's underlying risk and impact management. TNFD adoption is a starting point for deeper questions about governance, target credibility, and achieving real-world outcomes.



3 Use gaps in disclosure as a prompt for engagement.

Where companies in nature-sensitive sectors fail to disclose on material issues, this absence is informative. It gives investors a specific basis for direct engagement.



4 Broaden the evidence base beyond company disclosure.

Financial supervisors, including Frank Elderson of the European Central Bank, have called for investors to act on partial data given the greater risks of inaction. Investors can support this by incorporating qualitative and place-based evidence, including Indigenous and community expertise, alongside conventional disclosure. Our data landscape findings show this is already happening in a limited way, with Indigenous community data used to ground-truth satellite and geospatial sources. Resourcing this as a deliberate practice, rather than an occasional supplement, is a near-term step available to investors now.



5 Engage with collaborative initiatives with clear expectations.

Initiatives such as Nature Action 100 offer real value for shared learning and benchmarking. Investors should use them for this purpose while pressing for the clearer standards and better coordination our interviews identified as missing.

Looking Forward

Meeting this near-term agenda will not be sufficient on its own. Mark Carney's 2015 warning about the "tragedy of the horizon"[45] described a financial system built to act on short time horizons while its most severe risks emerge decades later. The same structural mismatch applies to nature. Our findings on fiduciary duty and systems governance suggest a new horizon for investors, one that will require change beyond better data and more active engagement within current structures.

This further horizon has two dimensions

The first is how portfolios are constructed. Institutional frameworks such as The Investment Integration Project's system-level investing approach are already exploring how large investors can manage systemic, market-wide risk as a distinct objective, alongside individual asset selection, rather than treating diversification as the only tool available for it.[46]

The second is who has a say in decisions about the systems investors are exposed to. Target 22 of the Global Biodiversity Framework, agreed by 196 governments in 2022, commits signatories to the full and effective participation of Indigenous Peoples and local communities in biodiversity-related decision-making. Investors operating in the systems this target covers are increasingly expected to consider what that commitment implies for their own engagement practices.

As Sir Partha Dasgupta concluded in his review of the economics of biodiversity, commissioned by the UK Treasury (2021)[47]: "We need to change how we think, act and measure economic success." The near-term steps set out in this report are the foundation for that change.

45 Carney, M. (2015, September 29). *Breaking the tragedy of the horizon – Climate change and financial stability* [Speech]. Bank of England.

46 The Investment Integration Project. (2026, May). *Investor case study: Health Employees Superannuation Trust Australia (HESTA)*.

47 Dasgupta, P. (2021). *The economics of biodiversity: The Dasgupta review*. HM Treasury.

9 Appendices



Photo: iStock

Acronyms

Acronym	Definition
AA1000	AccountAbility 1000 Assurance Standard
API	Active Pharmaceutical Ingredient — a biologically active component of a drug product.
AR6	Sixth Assessment Report — the IPCC's Sixth Assessment Report on climate change (2021–2022).
BIA	Biodiversity Impact Assessment
CAP	Criteria Air Pollutant — air pollutants regulated under national ambient air quality standards (e.g., NOx, SOx, PM).
CBD	Convention on Biological Diversity — an international treaty for the conservation of biological diversity, the sustainable use of its components and the equitable sharing of genetic resources.
CDP	Carbon Disclosure Project — a global non-profit running a disclosure platform for environmental data from companies, cities and governments.
COD	Chemical Oxygen Demand — a water-quality measure indicating the oxygen required to chemically oxidise pollutants in a water sample.
COP15	Conference of the Parties 15 — the 15th meeting of the CBD Conference of the Parties (Montreal, 2022) at which the Kunming-Montreal Global Biodiversity Framework was adopted.
CSR	Corporate Social Responsibility — a business model in which companies integrate social and environmental concerns into their operations and stakeholder interactions.
CSRD	Corporate Sustainability Reporting Directive — EU directive requiring large companies to disclose environmental and social risks and impacts.
ENCORE	Exploring Natural Capital Opportunities, Risks and Exposure — a tool mapping how industries depend on and impact ecosystem services.
EPS	Expanded Polystyrene — a lightweight plastic foam used in packaging, associated with pollution and end-of-life waste challenges.
EPR	Extended Producer Responsibility — a policy approach making producers responsible for the end-of-life management of their products.
ERM	Enterprise Risk Management — a firm-wide framework for identifying, assessing and managing risks across an organisation.
ESG	Environmental, Social and Governance — factors related to environmental, social and governance issues that may be relevant to assessing a company's risks, opportunities and long-term financial performance.
ESRS	European Sustainability Reporting Standards — standards developed under the CSRD for use by EU companies in sustainability reporting.
EU ETS	European Union Emissions Trading System — a cap-and-trade scheme covering greenhouse gas emissions across EU member states.
FLAG	Forest, Land and Agriculture — an SBTi category covering Scope 3 emissions from deforestation and agricultural production in corporate value chains.

Acronym	Definition
FPIC	Free, Prior and Informed Consent — the right of Indigenous Peoples to give or withhold consent to projects affecting their lands, territories and rights before those projects begin.
FSC	Forest Stewardship Council — an international non-profit certifying forests and forest products to responsible management standards.
GBF	Global Biodiversity Framework — the Kunming-Montreal Global Biodiversity Framework, adopted at COP15, setting targets to halt and reverse biodiversity loss by 2030.
GBIF	Global Biodiversity Information Facility
GHG	Greenhouse Gas — gases that trap heat in the atmosphere, including CO_2, methane and nitrous oxide.
GIS	Geographic Information System
GRI	Global Reporting Initiative — an independent international organisation that sets sustainability reporting standards.
HAP	Hazardous Air Pollutant — air pollutants known or suspected to cause cancer or other serious health effects.
HCS	High Carbon Stock — a methodology for distinguishing forested areas that should be protected from degraded land that may be converted.
HCV	High Conservation Value — a framework for identifying forests or ecosystems with exceptional ecological, social or cultural importance.
HSE	Health, Safety and Environment — the management function overseeing workplace safety and environmental compliance.
IBAT	Integrated Biodiversity Assessment Tool — a web platform providing access to data on protected areas, threatened species and key biodiversity areas.
ICMM	International Council on Mining and Metals — a CEO-led industry body setting standards for responsible mining and metals production.
IEA	International Energy Agency — an intergovernmental organisation providing energy statistics, analysis and policy advice.
ILO	International Labour Organization — a United Nations agency setting international labour standards and promoting decent work.
IMO	International Maritime Organization — the UN specialised agency responsible for regulating international shipping.
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services — an intergovernmental body assessing the state of biodiversity and ecosystem services globally.
IPCC	Intergovernmental Panel on Climate Change — a UN body that synthesises scientific knowledge on climate change.
ISAE 3000	International Standard on Assurance Engagements 3000 — the auditing standard for non-financial (sustainability) assurance engagements.
ISSB	International Sustainability Standards Board

Acronym	Definition
IUCN	International Union for Conservation of Nature — the global authority on the status of the natural world, publisher of the IUCN Red List of threatened species.
KBA	Key Biodiversity Area — a site of global importance for biodiversity conservation, identified using standardised criteria.
KPI	Key Performance Indicator — a measurable value used to evaluate success against defined objectives.
LEAP	Locate, Evaluate, Assess, Prepare — the TNFD's four-phase approach for organisations to identify and assess nature-related risks and opportunities.
MARPOL	International Convention for the Prevention of Pollution from Ships — the main international treaty covering pollution from ships, including air emissions (Annex VI).
MNE	Multinational Enterprise — a company operating across multiple countries.
NGO	Non-Governmental Organisation — a non-profit organisation operating independently of government.
NGFS	Network for Greening the Financial System — a group of central banks and financial supervisors promoting green finance and climate-related risk management.
NNL	No Net Loss — a target ensuring that biodiversity losses from business activities are fully offset by equivalent conservation gains.
NOx	Nitrogen Oxides — gaseous compounds produced during combustion, contributing to air pollution, acid rain and respiratory harm.
NPI	Nature Positive Impact — a goal to halt and reverse nature loss, leaving nature in a measurably better state.
ODS	Ozone depleting substances
OECD	Organisation for Economic Co-operation and Development — an intergovernmental organisation promoting policies to improve economic and social well-being globally.
PEFC	Programme for the Endorsement of Forest Certification — an international non-profit promoting sustainable forest management through independent third-party certification.
PM	Particulate Matter — airborne particles classified by size (e.g., PM2.5, PM10) that can penetrate the lungs and cause health damage.
PVC	Polyvinyl Chloride — a widely used synthetic plastic polymer associated with hazardous additives and end-of-life pollution challenges.
RCP	Representative Concentration Pathways
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals — the EU regulation governing the production, import and use of chemical substances.
RE100	Renewable Electricity 100 — a global corporate initiative for companies committing to sourcing 100% renewable electricity.
RSPO	Roundtable on Sustainable Palm Oil — an international non-profit setting standards for sustainable palm oil production and supply chains.

Acronym	Definition
SASB	Sustainability Accounting Standards Board — a standards body developing industry-specific sustainability disclosure standards for use by investors.
SBTi	Science Based Targets initiative — a body enabling companies to set GHG reduction targets aligned with climate science and the Paris Agreement.
SBTN	Science Based Targets for Nature (Network) — a framework and initiative helping companies set science-based targets to address nature loss across land, freshwater, ocean and atmosphere.
SMART	Specific Measurable Achievable Relevant and Time-bound
SICS	Sustainable Industry Classification System — SASB's system grouping companies into sectors and industries based on their sustainability risk profiles.
SOx	Sulphur Oxides — gaseous compounds produced by burning sulphur-containing fuels, contributing to acid rain and respiratory harm.
SSP	Shared Socioeconomic Pathway — scenarios used in IPCC assessments describing plausible future societal and emissions trajectories.
STAR	Species Threat Abatement and Restoration — a metric quantifying a site's potential contribution to reducing species extinction risk.
TCFD	Task Force on Climate-related Financial Disclosures — a framework for company disclosure of climate-related risks and opportunities to investors and financial stakeholders.
TNFD	Taskforce on Nature-related Financial Disclosures — the global framework for organisations to report and act on nature-related risks and opportunities.
TSS	Total Suspended Solids — a measure of particles suspended in water, used as an indicator of water quality and effluent load.
UN	United Nations — the international organisation of member states promoting peace, security and human rights.
UN WCMC	United Nations World Conservation Monitoring Centre — a centre providing decision-makers with biodiversity and ecosystem data to support global sustainability goals.
UNESCO	United Nations Educational, Scientific and Cultural Organization — a UN agency that designates World Heritage Sites and promotes education, science and culture.
UTS	University of Technology Sydney — the authoring institution of this report.
VOC	Volatile Organic Compound — carbon-based chemicals that evaporate at room temperature, contributing to tropospheric ozone and air pollution.
WRI	World Resources Institute — a global research organisation focused on sustainable management of natural resources.
ZDHC	Zero Discharge of Hazardous Chemicals — an industry initiative to eliminate harmful chemicals from textile, apparel and footwear supply chains.

Glossary

Term	Definition
Aggregate	Aggregate data is when multiple data sources are combined into one set to create a larger picture of a particular issue.
Alliance for Water Stewardship	An international certification standard for responsible corporate freshwater stewardship at site and basin level.
Biodiversity	The diversity of life on Earth.
Biodiversity Impact Assessment Tool	A tool used to assess the biodiversity impacts of operations by screening proximity to biodiversity-sensitive areas, such as protected areas and critical habitats.
Circular Economy	An economic system in which the value of products, materials and other resources in the economy is maintained for as long as possible, enhancing their efficient use in production and consumption, thereby reducing the environmental impact of their use, and minimising waste and the release of hazardous substances at all stages of their life cycle, including through the application of the waste hierarchy.
Core Disclosure Requirements	One of the TNFD's 14 disclosure recommendations. Each core recommendation is identified by a pillar and letter code: 'Governance A', 'Governance B', 'Governance C', 'Strategy A', 'Strategy B', 'Strategy C', etc.
Core Global Indicator	A quantitative or qualitative factor or variable that provides a simple and reliable means to measure performance. An indicator can be measured through one or multiple metrics. Here, the Core Global Indicator is the title given to one of the indicators associated with each TNFD Core Global Metric.
Core Global Metric	One of 10 Impact & Dependency Metrics required to be disclosed to market participants in line with the TNFD's disclosure recommendations.
Dependency	Reliance on nature — the ecosystem services and natural processes that underpin business operations and value chains.
Disaggregate	The splitting of data sources into their constituent parts; for example, splitting 'Total GHG emissions' into Scope 1, Scope 2 and Scope 3 emissions.
Disclosure Analysis	The analysis of nature-related disclosures reported by companies in their public information.
Disclosure Principles	The characteristics of disclosures that relate to what and how information is reported (e.g., Relevance, Understandability & Clarity, Specificity & Completeness, Verifiability & Reliability).
Disclosure Quality Check	A brief analysis of disclosure quality, according to the core disclosure principles proposed by the TCFD and adapted for the nature context.
Double Materiality	Double materiality has two dimensions, namely: impact materiality and financial materiality. European Commission (2023) Annex 1 to the Commission Delegated Regulation, supplementing Directive 2013/34/EU as amended by Directive 2022/2464 (CSRD), as regards sustainability reporting standards (ESRS E1).

Term	Definition
Downstream	All activities that are linked to the sale of products and services produced by the company. This includes the use and re-use of the product and its end of life, including recovery, recycling, and final disposal. Adapted from Science Based Targets Network (2023) SBTN Glossary of Terms.
Ecosystem Services	The provisioning, regulating, supporting, and cultural services provided to humans when the living and non-living elements of nature interact. For example, pollination, climate regulation, and storm protection.
Environmental Profit & Loss (EP&L)	A natural-capital accounting approach that monetises the environmental impacts across a company's value chain, making nature dependencies and impacts financially visible.
Impact	A change in the state of nature caused by a business activity, either positive or negative.
Impact Pathway (Transmission Pathway)	An impact pathway describes how, because of a specific business activity, a particular impact driver results in changes in natural capital, and how these changes in natural capital affect different stakeholders.
Intact Forest Landscape	A tract of forest showing no significant signs of human activity, assessed using satellite data and used as a baseline reference for forest condition.
LEAP Approach	The TNFD's four-phase methodology — Locate, Evaluate, Assess, Prepare — for organisations to identify and assess nature-related risks and opportunities.
Location-based Assessment	Assessment methodologies that integrate spatially explicit tools, data sources and/or parameters, for example, conducting site assessments at high-risk sites, or tracking deforestation using satellite data.
Material Issue	An issue that has a direct or indirect impact on an organisation's ability to create, preserve, or erode economic, environmental, and social value.
Materiality Profile	A snapshot of the material issues identified for each sector based on results of the sector materiality screen.
Materiality Screen	The high-level assessment process undertaken to identify the material issues relevant to a particular economic activity, production process, supply chain, company, or sector.
Mitigation Hierarchy (and Conservation Hierarchy)	The sequence of actions to anticipate and avoid, and where avoidance is not possible, minimise, and when impacts occur, restore, and where significant residual impacts remain, offset biodiversity-related risks and impacts. The conservation hierarchy goes beyond mitigating impacts to encompass activities addressing historical, systemic and non-attributable biodiversity loss. The TNFD aligns to the SBTN AR3T Framework covering actions to Avoid, Reduce, Regenerate, Restore and Transform. It is built on the IFC Performance Standard 6 and the Conservation Hierarchy.
Natural Capital	The stock of renewable and non-renewable natural resources (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.
Nature	The natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment.
Nature-loss Driver	The source of loss and/or decline in the state of nature, as described by the IPBES (2019).
Nature-loss Pressure	A sub-category of nature-loss drivers defined by ENCORE (12 key pressures in total).

Term	Definition
Nature Positive	A high-level goal and concept describing a future state of nature (e.g., biodiversity, ecosystem services and natural capital) that is greater than the current state. Aligned to the GBF goal of halting and reversing biodiversity loss by 2030.
Net Positive Impact (NPI)	A target requiring an organisation to leave nature in a measurably better state than before its activities — going beyond No Net Loss to deliver a net gain for biodiversity.
Net Water Positive	A commitment to replenish more water than is consumed, resulting in a net benefit to water basins at the catchment level.
No Net Loss (NNL)	A principle requiring that biodiversity losses resulting from business activities are fully offset by equivalent conservation gains, so that the overall outcome is neutral.
Regenerative Agriculture	Farming practices that restore soil health, biodiversity and water cycles, sequestering carbon and rebuilding ecosystem function beyond conventional sustainable agriculture. Noting that there is not a commonly agreed definition of this term.
Resilience	Resilience is defined as having the capacity to live and develop with change and uncertainty. It provides capacities for turning risks into opportunities. This includes: (1) adaptive capacities to absorb shocks and turbulence and avoid unpleasant tipping points, thresholds, and regime shifts; (2) capacities to prepare for, learn from, and navigate uncertainty and surprise; (3) capacities for keeping options alive and creating space for innovation; and (4) capacities for systemic transformation in the face of crises and unsustainable development pathways and traps.
Risk	Magnitude of Threat x Hazard; the likelihood and severity that a nature-related event will occur, producing a financial or operational impact.
Science Based Target (SBT)	An emissions reduction or nature-related target set in line with the level of action required to meet Paris Agreement goals or nature-positive goals, validated by SBTi or SBTN as applicable.
Sensitive Location	Locations where the assets and/or activities in an organisation's direct operations — and, where possible, upstream and downstream value chain(s) — interface with nature in locations that are important to biodiversity and ecosystem functioning across several key dimensions.
State of Nature Assessment	An evaluation of the condition and trends in biodiversity within a given area, using metrics such as the Ecoregion Intactness Index and STAR.
Sustainability	The practice of operating in a manner that ensures long-term environmental, social, and economic well-being for present and future generations.
TNFD Pillar	One of four key disclosure thematics, namely 'Governance', 'Strategy', 'Risk Management', and 'Metrics & Target Setting'.
Upstream	All activities linked to the production of goods and services used by the reporting company, including raw material extraction, processing and logistics up to the point of delivery to the company.
Volumetric Water Benefit Accounting	A framework for quantifying the water replenishment benefits generated by corporate conservation investments, enabling water-restoration claims to be verified against basin-level baselines.

Appendix A – Disclosure quality analysis

The 'Disclosure Quality Check' adopted the most relevant of the 'Principles of Effective Disclosures' recommended by the TCFD, adjusted for nature disclosures. While the TNFD framework also publishes a set of disclosure requirements and principles, unlike the TCFD, these principles focus more on 'what' is being disclosed, rather than 'how.' To ensure our analysis also considered the 'architecture' of disclosures, and the quality of the information presented, it was therefore important we adopted elements of the TNFD disclosure principles. In the table below we outline how we adopted and adjusted the most relevant TCFD principles for the nature context.

TCFD principles of effective disclosures	TNFD adjusted
Principle 2: Disclosures should be specific and complete	A company's disclosure should cover its exposure to potential nature-related impacts, including the nature and size of these impacts, governance, strategy, risk management processes, and performance. Disclosures should include historical and future-oriented information for users to assess performance and future financial implications. Quantitative information should define scope and assumptions, align with investment decision-making data, and scenario analyses should be based on the company's data. The effect on risk metrics or exposures to changes should also be demonstrated where appropriate.
Principle 3: Disclosures should be clear, balanced, and understandable	Disclosures should be detailed for sophisticated users yet concise for others. Clear communication is key for efficient information identification. Balancing qualitative and quantitative data is essential, using text, numbers, and graphics appropriately. Narrative explanations should offer insight into quantitative disclosures, portraying risks and opportunities objectively. Terms in disclosures should be explained for user understanding.
Principle 6: Disclosures should be reliable, verifiable, and objective	Disclosures must offer high-quality, reliable information that is accurate and unbiased. Future-oriented disclosures require clear company judgment, explained adequately. They should rely on objective data and best-in-class measurement methodologies, including evolving industry practices. Information should be defined, collected, recorded, and analysed in a verifiable manner. Assumptions for future information should be traceable to their sources. While external assurance is not mandatory, disclosures should undergo internal governance processes similar to financial reporting standards.

Appendix B – Details on nature-related collaborative initiatives

Name	Lead	Sector	Start	Description	Aims	Outcomes	Participants	AUM
Food Emissions 50	CERES	Agriculture	2021-	Engaging 50 of the highest-emitting food companies in North America on climate disclosures, targets and transition plans.	Asks on: value chain emissions disclosure and science-based emissions targets; climate transition action plans; implementation of actions and disclosure against progress.	Annual benchmarking report of target companies, with overall progress in 2025 on stronger supply chain disclosure, more sophisticated scenario analysis, opportunities in reducing potent agriculture emissions, major companies quantifying reduction strategies.	Investors	Not listed
Deforestation Action Group	IIGCC	Agriculture	2026-	Continuation of the Finance Sector Deforestation Action initiative to mitigate financial risks related to deforestation, ecosystem conversion and associated human rights risks in investor's portfolios.	DIG participants need to implement the Guidance on Integrating Deforestation into Net Zero Strategies.	Guidance on Integrating Deforestation into Net Zero Strategies (forthcoming)	Investors	Newly formed, no details
IEHN Working Group for Pesticide Reduction and Biodiversity	Mercy Investment Services and IEHN	Agriculture	2018-	Engages companies to disclose and reduce pesticide dependence, adopt biodiversity protection strategies, and accelerate the transition to safer, more sustainable agricultural practices.	Strategic focus on IEHN's investor guidance and disclosure goals provide a roadmap to advance pesticide reduction, and protection of biodiversity for food manufacturers, retailers, and agrochemical companies.	Developed metrics and engagement expectations to track and assess portfolio vulnerability associated with use of highly hazardous pesticides	Investors	Not listed
Seafood Traceability Engagement	FAIRR	Agriculture	2023-	Bringing key seafood sector investors together to engage in dialogues with seven of the largest global seafood companies.	Company recognition of lacking traceability as a material risk, development/ enhancement of traceability commitments (Phase 1)	Phase 1 established an assessment framework for companies' disclosures, engaged with the seven companies by letter and dialogue with six.	45 investors, UNEP, Planet Tracker, World Benchmarking Alliance	US$9.6 trillion
Biodiversity loss from waste and pollution	FAIRR	Agriculture	2022-	Focuses on waste and pollution, as a key driver of biodiversity loss, and interlinked with climate change, and water scarcity and quality. Targets 10 of the largest publicly listed pork and poultry producers, plus two fertiliser producers.	Asks: risk assessments on management of manure and animal waste and action plans to reduce biodiversity impact. Longer-term aim to create economic value through investments in nutrient circularity.	Phase 1 undertook an initial assessment of the 10 companies.	Phase 1, 80 investors Phase 2, 71 investors	Phase 1, US$23 trillion Phase 2, US$16.6 trillion
Satellite-based engagement on no deforestation	Cardano, supported by Sat-intelligence	Agriculture	2021-	Radar and satellite images provided by Satelligence show vegetation cover changes in nature areas, which are connected to companies through public supply chain data demonstrate (lack of) progress.	No more deforestation by 2030	None listed	Investors	€1.8 trillion

Name	Lead	Sector	Start	Description	Aims	Outcomes	Participants	AUM
Investor Working Group for a Deforestation-Free Automotive Industry	Storebrand AM Joint led with Columbia Threadneedle, Rainforest Foundation Norway	Automobile	2022-	Engages 15 companies on deforestation risks stemming from the use of leather (for car seats) and rubber (for tires).	Six specific company asks around targets for a deforestation free supply chain, assessing and disclosing deforestation risk and risk management, transparency on the origin of products, engagement with risky suppliers and generally with all suppliers on risk management and disclosure.	Various Rainforest Foundation Norway reports including a scorecard on the companies.	Investors	Not listed.
The Investor Initiative on Responsible Nickel Supply Chains	Rainforest Foundation Norway, the Dutch Association of Investors for Sustainable Development (VBDO)	Automobile	2024-	Focus on the sustainability dimensions of nickel supply chains in the Electric Vehicle (EV) sector. Engaging 28 Global automakers and EV battery producers.	Asks: 1) responsible mining requirements, 2) enhanced environmental & social due diligence, 3) commitments in nickel supply chains.	31 investors signed a joint statement.	Investors, civil society organisations	US$4.5 trillion
Investor Initiative on Hazardous Chemicals	Aviva, Storebrand AM, ChemSec	Chemicals	2023-	Aims to reduce the adverse impacts of hazardous chemicals and members' exposure to associated financial risks. Members engage with 50 of the world's largest publicly traded chemical companies.	Key requests: increase transparency, phase-out of persistent chemicals, reduce hazardous product portfolio, increase share of safer solutions	ChemScore report published annually with company scores	80 investors	US$23 trillion under management or advice
Investor engagement campaign on the Pesticides industry	ShareAction	Chemicals	2023-	Aims to address the immense risks to biodiversity posed by the pesticides industry. Focuses on global pesticides players, BASF, Bayer, FMC Corporation, Syngenta, Corteva and UPL.	Asks: establish and measure progress on commitments to reduce risks of pesticide products, biodiversity-related disclosure, develop a transition plan and product stewardship strategy.	Assessment of 6 larges pesticide companies' approach to biodiversity loss	Investors	Not listed
Investor Collaboration Marine Microplastic Pollution	First Sentier and Marine Conservation Society	Consumer products	2020-	Encourage domestic and commercial washing machine manufacturers to add filter technology as standard to all new washing machines produced by the end of 2023.	Engage with policymakers globally to introduce legislation for manufacturers.	Policy advocacy with the UK, Australian and EU Governments, microplastic pollution report	30 investors	Not listed
Valuing Water Finance Initiative	Ceres	Cross sector	2022-	Aims to engage 71 companies with a large water footprint to value and act on water as a financial risk and drive the necessary large-scale change to better protect water systems.	Meet a set of six, science-based, actionable expectations aligned with the UN SDG goal for Water and the actions laid out in the Ceres Roadmap 2030.	Biannual company benchmark reports for 71 companies, document outlining corporate expectations for valuing water	100+ investors	US$18 trillion

Name	Lead	Sector	Start	Description	Aims	Outcomes	Participants	AUM
Nature Action 100	Ceres, IIGCC, FfB Foundation, Planet Tracker	Cross sector	2023-	Aims to mobilise institutional investors to establish a common high-level agenda for engagements and a clear set of expectations to drive greater corporate ambition and action on nature and biodiversity loss. Targeting 100 companies across eight sectors.	Key objectives: map sector pathways; coordinate, inform, and support engagements with companies; detail ambitious actions to protect and restore nature; track company progress against key benchmark indicators.	Company benchmark measures progress overall and by company, document outlining Nature 100 investor expectations for companies	240+ investors	US$30 trillion
The BRIDGE project	Deltares, WWF, Achmea, NN, SCOR	Cross sector	2023-	Aims to deepen the understanding of water-related risks and encourage a shift in how investors understand and consider water-related risks.	Develop a new approach to mapping water-related risks to engage with investee companies, bridging the gap between location-specific risk and portfolio-wide risks.	Research report on enhancing water-related sustainability data	Investors, NGO	Not listed
Biodiversity and Natural Capital Stewardship Programme	Morningstar Sustainalytics	Cross sector	2024-	Targets 50 national and multinational companies in the agricultural value chain – from financiers and retailers to traders, agrochemicals and producers.	Address specific gaps in companies' biodiversity management, covering governance, risk management, strategy, targets, and transparency.	None listed	130 investors, policy makers, NGOs	US$4.2 trillion*
Spring: A PRI Stewardship Initiative for Nature	PRI	Cross sector	2024-	Aims to address the systemic risk of nature loss to societies and long-term portfolio value creation by enhancing corporate practices on forest loss and land degradation.	Expectations for companies across: business operations, strategy and risk management; supply chain management; and political engagement.	96 investors participating in company engagements, annual progress reports	240 investors, 96 involved in company engagements	US$18 trillion
Nature Benchmark Collective Impact Coalition (CIC)	World Benchmarking Alliance	Business models	2024-	Time-bound, group of different organisations with collective influence to transform companies' behaviour.	Three objectives: company measurement and disclosure of nature impacts and dependencies; raise awareness and increase understanding of the state of play; build/increase capacity of stakeholders to engage companies.	Companies will be assessed against the WBA's Nature benchmark	Investors, civil society	Not listed
Investor Policy Dialogue on Deforestation	Co-chairs: Storebrand AM, BlueBay Asset Management	Policy	2020-	Established to engage with public agencies and industry associations in selected countries on the issue of deforestation.	Three streams engaging with: Brazilian government, Indonesian government and financial regulators, consumer countries (US/UK/EU) on the demand side.	Latest progress report (2020-22) outlines open dialogue with the Brazilian government, informing Indonesian ministries and financial institutions	84 investors across 21 countries	US$11 trillion
FABRIC	Finance for Biodiversity (FfB) Foundation	Textiles	2024-	Aims to address the textile and apparel sector's impacts on nature and seeks to drive biodiversity-positive practices, by engaging 16 global sector leaders.	Asks: biodiversity-positive practices, supply chain traceability, application of circular economy principles, science-based, time-bound targets and TNFD aligned disclosures.	Investors' expectations for companies document, engagement brief on nature	16 investors	Not listed

Adapted from Finance for Biodiversity Foundation (2026). Additional sources: Ceres (2026), IIGCC (2026), FAIRR (2026a), FAIRR (2026b), Satintelligence (2020), Cardano (n.d.), Rainforest Foundation Noway (n.d), Aid Environment (2026), VBDO (2025), ChemSec (2026), First Sentier (n.d.), Responsible Investor (2021), Nation Action 100 (2026), IIGCC (2026), Morningstar Sustainalytics (2026), PRI (n.d.), PRI (n.d.) World Benchmarking Alliance (2024), IPDD (2026), FfB Foundation (n.d.) Share Action (2026), Share Action (2023), Morningstar Sustainalytics (2024), NN Group (2023)

*(investors engaged in steward-ship services)

Important Information

This material is intended for professional investors , sophisticated or wholesale clients or professional or institutional clients (or equivalent) as may be defined in the jurisdiction in which the material is received, including Hong Kong and Singapore and should not be relied upon by other persons. It is made available to you for information purposes only and does not constitute investment or financial advice, an offer of asset management services, a recommendation or an offer or solicitation to buy, hold or sell any security and has not been prepared in connection with any such offer.

This material is neither directed at nor intended to be accessed by persons resident in, or citizens of any country, or types or categories of individual where to allow such access would require any registration, filing, application for any licence or approval or other steps to be taken by First Sentier Investors in order to comply with local laws or regulatory requirements in such country.

This material does not constitute investment research. Accordingly, this information has not been prepared in compliance with the legal provisions promoting independent investment research, and it is not subject to any restriction prohibiting the execution of transactions prior to the dissemination of investment research. Any research in this document has been procured and may have been acted upon by First Sentier Investors for its own purposes.

Reference to specific securities (if any) is included for the purpose of illustration only and should not be construed as a recommendation to buy, sell or hold the same. All securities mentioned herein may or may not form part of the holdings of First Sentier Investors, Mitsubishi UFJ Trust and Banking Corporation ('the Trust Bank') ' or Mitsubishi UFJ Financial Group, Inc. ('MUFG') portfolios at a certain point in time, and the holdings may change over time.

Although the information presented here is from sources believed to be reliable and reputable, neither First Sentier Investors, the Trust Bank nor MUFG make any representation or warranty in relation to the accuracy, completeness or reliability of any information contained here. The information and views expressed are those of the authors and not necessarily those of either First Sentier Investors, the Trust Bank or MUFG. The opinions expressed are subject to change without notice. Reliance upon information in this material is at the sole discretion of the reader. To the extent permitted by law, no liability is accepted by MUFG, First Sentier Investors, nor their affiliates for any loss or damage as a result of any reliance on or use of this material.

This document is the intellectual property of First Sentier Investors, the Trust Bank and if applicable a third party. They retain all intellectual property or other rights in all information and content (including, but not limited to, all text, data, graphics and logos).

References to 'we' or 'us' are references to First Sentier Investors, a global investment management business, the ultimate owner of which is MUFG. First Sentier Investors includes a number of entities in different jurisdictions.

For readers located in the United Kingdom, this document is issued by First Sentier Investors (UK) Funds Limited (First Sentier Investors), authorised and regulated by the Financial Conduct Authority. Registered office: Finsbury Circus House, 15 Finsbury Circus, London EC2M 7EB.

For readers located in the EU, this document is issued by First Sentier Investors (Ireland) Limited (First Sentier Investors), authorised and regulated by the Central Bank of Ireland. Registered office: 70 Sir John Rogerson's Quay, Dublin 2, Ireland number 629188 (CBI registration number C182306).

For readers located in Hong Kong, this document is issued by First Sentier Investors (Hong Kong) Limited and has not been reviewed by the Securities & Futures Commission in Hong Kong. First Sentier Investors, FSSA Investment Managers, Stewart Investors, RQI Investors and Igneo Infrastructure Partners are the business names of First Sentier Investors (Hong Kong) Limited.

For readers located in Singapore, this document is issued by First Sentier Investors (Singapore) whose company registration number is 196900420D. This advertisement or publication has not been reviewed by the Monetary Authority of Singapore. First Sentier Investors (registration number 53236800B), FSSA Investment Managers (registration number 53314080C), Stewart Investors (registration number 53310114W), RQI Investors (registration number 53472532E) and Igneo Infrastructure Partners (registration number 53447928J) are the business divisions of First Sentier Investors (Singapore).

For readers located in Australia, this document is issued by First Sentier Investors (Australia) IM Limited (ABN 89 114 194311 AFSL 289017). This material is intended for persons who are professional, sophisticated or 'wholesale clients' (as defined under the Corporations Act 2001 (Cth) (**Corporations Act**)) and has not been prepared for and is not intended for persons who are 'retail clients' (as defined under the Corporations Act). This material contains general information only. It is not intended to provide you with financial product advice and does not take into account your objectives, financial situation or needs. Before making an investment decision you should consider, with a financial advisor, whether this information is appropriate in light of your investment needs, objectives and financial situation. Any opinions expressed in this material are the opinions of the author only and are subject to change without notice. Such opinions are not a recommendation to hold, purchase or sell a particular financial product and may not include all of the information needed to make an investment decision in relation to such a financial product.

In the US, this document is issued by First Sentier Investors (US) LLC authorised and regulated by the Securities Exchange Commission (RIA 801-93167).

Notes

Design by www.joyuendesign.com.au

First Sentier MUFG
Sustainable Investment Institute

