Iceberg Data Lab

Enabling Sustainable Goals

Client Guide

Dependencies

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Executive summary

Biodiversity loss — the reduction of biological diversity at the genetic, species, and ecosystem levels through extinction, degradation, or removal (IPBES, 2019) - has been recognized as one of the top five global risks to society (World Economic Forum, 2022). This is particularly critical for financial institutions, as an estimated $44 trillion of economic value generation—more than half of global GDP — depends moderately or highly on nature and its services (World Economic Forum, 2020[1]).

Understanding how economic activities rely on nature is essential for assessing financial risks and opportunities. This guide introduces Iceberg Data Lab's Dependency Scores, which quantify exposure to ecosystem service dependencies at corporate and portfolio levels.

Dependency Scores provide a systematic, data-driven assessment of how economic activities depend on ecosystem services. Developed using the ENCORE framework, the Millennium Ecosystem Assessment (MEA), and Iceberg Data Lab's proprietary models, they offer a structured approach to identifying and quantifying reliance on nature. They enable financial institutions to determine which ecosystem services are most critical to different activities, evaluate the extent of financial exposure linked to nature dependencies, compare sectoral and geographical variations, and integrate these insights into risk analysis and engagement strategies with portfolio companies.

The regulatory and voluntary disclosure landscape is evolving rapidly, making the assessment of nature dependencies increasingly relevant for financial institutions. Several frameworks now require or encourage financial market participants to integrate dependency assessments into their reporting and risk management processes. The concept of double materiality, as defined by the European Commission, underpins regulatory initiatives such as the Sustainable Finance Disclosure Regulation (SFDR) and the Corporate Sustainability Reporting Directive (CSRD). These regulations require financial institutions to report both on their impact on nature (outward materiality) and on their dependencies on nature (inward materiality), reinforcing the need for reliable dependency metrics.

Beyond European regulations, the Taskforce on Nature-related Financial Disclosures (TNFD) is emerging as a key voluntary framework, structured around the LEAP approach (Locate, Evaluate, Assess, Prepare). TNFD requires companies and financial institutions to assess their dependencies on ecosystem services and the resulting physical risks, in alignment with the logic of climate-related risk disclosure under the Taskforce on Climate-related Financial Disclosures (TCFD). The growing momentum around biodiversity risk reporting was further reinforced at COP 15 in Montreal in 2022, where the Global Biodiversity Framework (GBF) introduced Target 15, calling for corporations and financial institutions to disclose their dependencies on nature. This guide provides the necessary

[1] World Economic Forum, Nature Risk Rising (2020)

context and methodology to understand, interpret, and apply these metrics effectively within financial analysis.

A. Introduction: Nature in economic and financial systems

Biodiversity forms the foundation of global economic systems by ensuring the stability and resilience of natural ecosystems that support human activities. Ecosystem services, generally understood as the benefits that nature provides to humans - such as water purification, pollination, carbon sequestration, and soil fertility - are essential for industries ranging from agriculture and forestry to pharmaceuticals and infrastructure development. These services, often taken for granted, provide critical inputs to global supply chains and contribute to economic productivity across multiple sectors.

Despite their fundamental role, ecosystem services are under increasing pressure due to biodiversity loss. Human activities, including land-use change, pollution, overexploitation of natural resources, and climate change, are driving unprecedented declines in species and habitat quality. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) estimates that nearly 75% of the Earth's terrestrial environments and 66% of marine ecosystems have been significantly altered by human activity. As biodiversity declines, the stability of ecosystem services becomes compromised, creating financial risks for businesses and investors reliant on nature.

Incorporating biodiversity into financial decision-making requires a robust framework to assess both how economic activities impact nature and how nature-related risks affect financial performance. This dual perspective, known as double materiality, has become a cornerstone of sustainability reporting and regulatory initiatives.

The European Commission’s definition of double materiality distinguishes between impact materiality and financial materiality. Impact materiality refers to how a company’s activities affect biodiversity and ecosystem services, including deforestation, pollution, and habitat destruction. Financial materiality, on the other hand, examines how a company’s reliance on nature exposes it to financial risks, such as supply chain disruptions, asset devaluation, or regulatory liabilities.

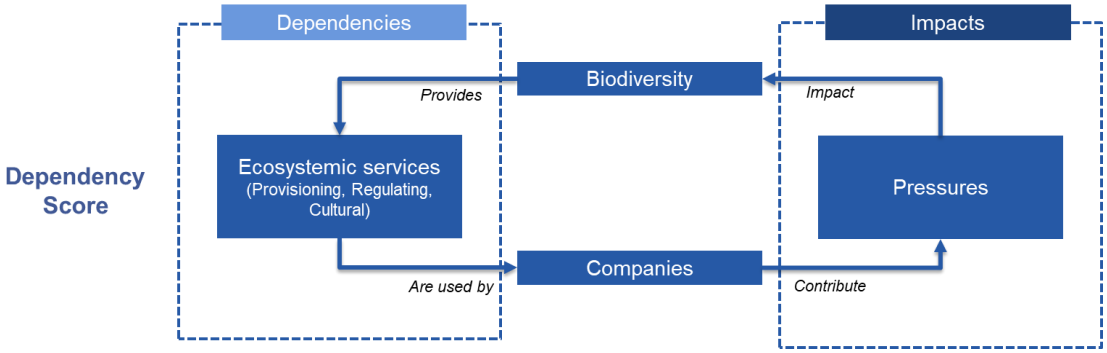

Figure 1: Double materiality principle linking impacts and dependencies

For financial institutions, assessing double materiality is critical for investment decision-making, risk management, and regulatory compliance. Iceberg Data Lab's Dependencies product provides a structured methodology to measure financial exposure to nature-related dependencies.

B. Understanding Ecosystem Services and Dependencies

B.1. Ecosystem Services

Ecosystem services form the foundation of economic activity by providing essential resources and functions that sustain production processes across all industries. The Millennium Ecosystem Assessment (MEA, 2003) categorizes these services into four main types: provisioning (e.g., food, water, raw materials), regulating (e.g., climate regulation, water purification, pollination), supporting (e.g., soil formation, nutrient cycling), and cultural (e.g., recreation, aesthetic value, spiritual significance). These services are fundamental to business operations, yet their degradation or loss due to environmental pressures can create significant financial and operational risks.

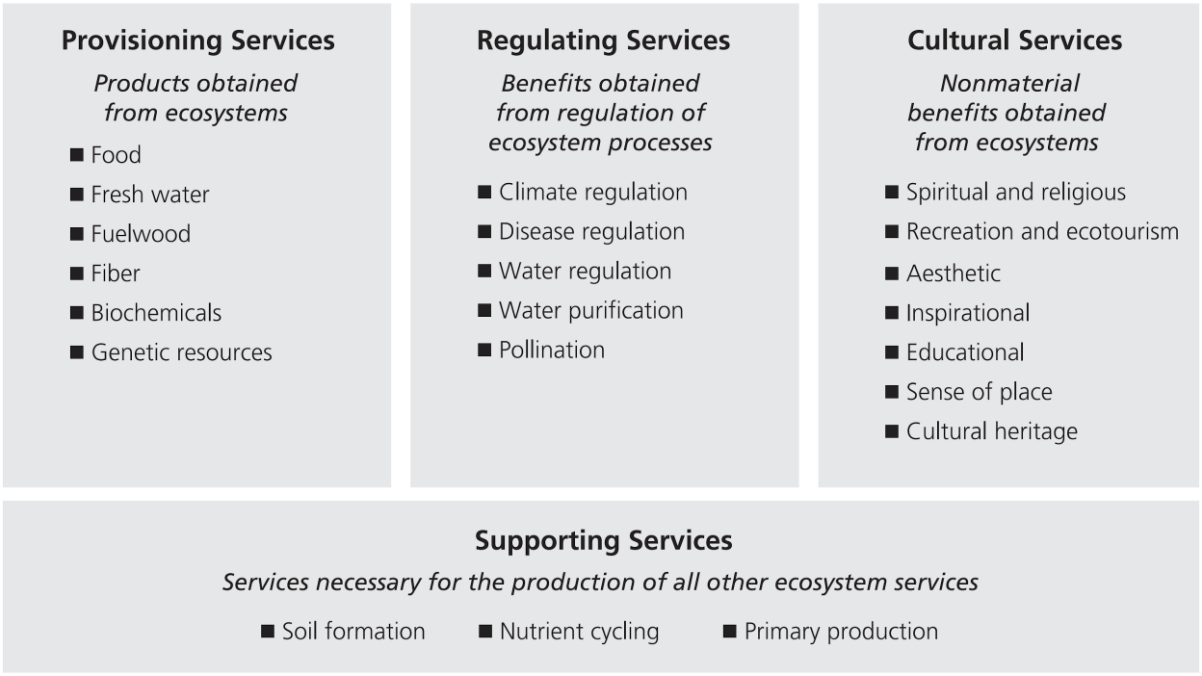

Figure 2: Classification of ecosystem services into four main categories, provisioning, regulating, supporting, and cultural. Source: (MEA, 2003)

Economic sectors depend on ecosystem services in different ways and to varying degrees. Industries such as agriculture, forestry, fisheries, and water utilities have direct dependencies on nature, as their primary inputs come from ecosystems. Other sectors, such as manufacturing, pharmaceuticals, and energy production, rely on ecosystem services indirectly, through supply chains or the availability of natural resources. Even service-based industries, while less exposed, may have dependencies through infrastructure, climate stability, or employee well-being. This reliance means that disruptions to ecosystem services—whether due to climate change, land

degradation, or biodiversity loss—can have direct economic repercussions, affecting revenue streams, supply chain resilience, and operational costs.

Measuring corporate dependencies on ecosystem services presents methodological challenges. Data gaps remain a significant issue, as comprehensive, sector-specific data on ecosystem service use and degradation is often lacking. Geographic variability adds complexity since the availability and stability of ecosystem services are location-dependent. A company's reliance on a service such as freshwater supply, for example, may be negligible in water-abundant regions but critical in water-scarce areas. Additionally, risk considerations must account for the dynamic nature of ecosystem services, where degradation may not have immediate consequences but could create systemic risks over time.

To evaluate the risks associated with ecosystem service dependencies, Iceberg Data Lab distinguishes three key dimensions:

Ecosystem Services Reliance assesses how significantly economic activities depend on a given ecosystem service. This factor is activity-specific and does not vary based on geographic location.

Ecosystem Services Relevance measures the importance of an ecosystem service in a specific geographic context. This aspect accounts for local environmental conditions that may affect the availability and stability of the service.

Ecosystem Services Resilience evaluates the capacity of an ecosystem service to continue functioning despite environmental pressures, assessing both current conditions and future risks of degradation or collapse.

Together, these three factors help identify exposure to ecosystem service dependencies and inform financial risk assessments for businesses and investors. Additional considerations, such as corporate mitigation strategies and adaptation measures, can further refine risk evaluation by identifying potential ways to reduce exposure.

Iceberg Data Lab's dependency assessment follows a structured approach to value chain boundaries. Dependencies are classified as Direct when they occur within a company's own operations (Scope 1). Indirect dependencies include both Upstream (supply chain-related dependencies, including purchased electricity and heat) and Downstream (dependencies associated with product use and end-of-life processing). Understanding these distinctions is crucial for financial institutions to assess exposure across portfolio holdings and integrate ecosystem service dependencies into investment decision-making.

B.2. Assessing Dependencies with Iceberg Data Lab's Metrics

Understanding nature-related dependencies requires translating ecological and economic data into meaningful financial insights. Iceberg Data Lab's methodology provides a structured approach to assessing dependencies using two key metrics: the **Revenue Dependency on Ecosystem Services (ReDES)** and the **Average High Dependency Score (AHDS)**. These scores quantify exposure to nature-related dependencies across economic activities and value chains, enabling financial institutions to incorporate these risks into decision-making.

Iceberg Data Lab's dependency assessment builds upon established frameworks, particularly the ENCORE[2] database and sectoral research, to evaluate how economic activities rely on ecosystem services. This methodology determines materiality levels based on functional reliance and financial significance, offering a transparent framework for understanding the financial implications of ecosystem disruptions.

ENCORE, developed by the Natural Capital Finance Alliance[3] in partnership with UNEP-WCMC[4], provides a comprehensive dataset linking economic sectors to their dependencies on 25 ecosystem services. The latest ENCORE methodology integrates the System of Environmental-Economic Accounting Ecosystem Accounting (SEEA EA), ensuring alignment with financial institution objectives and regulatory frameworks such as TNFD. Within this framework, ecosystem services are classified into provisioning, regulating, and cultural services. Provisioning services include the direct inputs required for production processes, such as biomass supply and water availability. Regulating services encompass the functions that maintain stable operating conditions, such as pollination, climate regulation, and water purification. Cultural services provide non-material benefits, including recreation, education, and aesthetic value.

While ENCORE serves as a foundational dataset, Iceberg Data Lab refines this framework through sector-specific research, expert interviews, and quantitative modeling. This hybrid approach enhances the finance-oriented evaluation of nature dependencies by addressing data gaps and refining dependency ratings for complex economic activities.

[2] https://encore.naturalcapital.finance/en
[3] http://www.naturalcapitalfinancealliance.org/
[4] https://www.unep-wcmc.org/en

Regulating	Provisioning	Cultural
Global Climate Regulation Services	Biomass Provisioning Services	Recreation Related Services
Rainfall Pattern Regulation	Genetic Material Services	Visual Amenity Services
Local Climate Regulation Services	Water Supply	Education, Scientific and Research Services
Air Filtration Services	Other Provisioning Services – Animal Based Energy	Spiritual, Artistic, and Symbolic Services
Soil Quality Regulation Services		
Soil and Sediment Retention Services		
Solid Waste Remediation		
Water Purification Services		
Water Flow Regulation Services		
Flood Mitigation Services		
Storm Mitigation Services		
Noise Attenuation Services		
Pollination Services		
Biological Control Services		
Nursery Population and Habitat Maintenance Services		
Other Regulating and Maintenance Services – Dilution by Atmosphere and Ecosystems		
Other Regulating and Maintenance Service – Mediation of Sensory Impact (Other Than Noise)		

Table 1: Ecosystem services with dependency scores based on the ENCORE database.[5]

[5] ENCORE explanatory note JUNE 2024

The assessment of each sector's dependency on ecosystem services follows a structured approach based on two dimensions. The first dimension, functional reliance, evaluates the extent to which an economic activity depends on a given ecosystem service. If the reliance is limited, the activity can continue with minor modifications. A moderate reliance indicates that the activity can continue only with substantial adjustments, such as slower production or increased costs. A severe reliance means the activity cannot function without the ecosystem service. The second dimension, financial impact, measures the cost of adapting to a disruption in ecosystem services. A limited financial impact implies that the adaptation cost is minor and does not affect financial stability. A moderate financial impact suggests that the cost is significant but does not threaten financial viability. A severe financial impact indicates that the cost is substantial enough to affect a company's financial health.

The combination of these two dimensions determines a dependency materiality rating, classified as Very Low, Low, Medium, High, or Very High. These ratings provide financial institutions with a clear indication of which ecosystem services are critical to production processes and where potential risks may arise. It is important to emphasize that ENCORE's framework does not predict the probability of ecosystem service failure. Instead, it evaluates the consequences of failure should it occur, helping businesses and investors understand their exposure to nature-related risks.

Score	Functionality Loss	Financial Loss
1	Limited	Low
2	Moderate	Moderate
3	Severe	Severe

Table 2a: Score of the different impacts tied to an ES loss

These scores are then summed, each with a coefficient of 1, to give a materiality rating.

Sum of Scores	Materiality Rating
2	VL
3	L
4	M
5	H
6	VH

Table 2b: Correspondence between Materiality Ratings and the scores

Iceberg Data Lab's methodology refines and expands upon ENCORE's approach through two key dependency scores. The **Revenue Dependency on Ecosystem Services (ReDES)** measures the extent to which a company's revenue is tied to ecosystem services. This metric captures the financial reliance of an economic activity on nature, incorporating sector-specific weighting based on empirical data and industry benchmarks. The **Average High Dependency Score (AHDS)** assesses the relative exposure of different sectors to high-dependency ecosystem services, offering a comparative measure of vulnerability across industries. By combining these two scores, Iceberg Data Lab provides a structured, finance-oriented evaluation of nature dependencies that aligns with corporate risk management and financial decision-making.

Both scores leverage sectoral research and financial modeling to translate ecosystem dependencies into financial materiality ratings. These metrics enable financial institutions to assess dependencies at both corporate and portfolio levels, facilitating the integration of nature-related risk into investment decision-making.

By assessing ecosystem dependencies through functional reliance and financial costs, Iceberg Data Lab's methodology establishes a direct connection between nature loss and financial exposure. A high dependency materiality rating suggests that a company will incur significant financial costs, though it may still maintain financial viability. A very high dependency materiality rating, on the other hand, indicates that an ecosystem service disruption could threaten the company's financial stability.

Since adaptation costs are not explicitly defined in ENCORE, Iceberg Data Lab incorporates corporate finance principles to evaluate financial viability under different scenarios. When adaptation costs consume a large percentage of revenues, operating income (EBIT), or free cash flow, companies may experience liquidity issues or require restructuring. If the cost reduces profitability but does not threaten long-term viability, the financial impact is considered moderate. In cases where costs can be absorbed without significant financial distress, the impact remains low. This quantitative linkage between nature dependencies and financial performance provides investors with a structured approach to risk assessment.

While Iceberg Data Lab's methodology offers a sector-based (NACE classification) approach to dependency analysis, it does not account for geographic variation in ecosystem resilience in a granular way. Dependencies are primarily evaluated at a sectoral level rather than on a location-specific basis. Additionally, this methodology does not assess the probability of ecosystem service failure but focuses on the consequences of failure should it occur. However, by combining sector-level dependency scores with corporate disclosures and geospatial data, financial institutions can refine their exposure assessments and develop more effective nature-positive investment strategies.

C. Understanding ReDES and AHDS

C.1. ReDES: Revenue Dependency on Ecosystem Services

Understanding the extent to which an economic activity is financially exposed to ecosystem service disruptions requires a clear and structured metric. Revenue Dependency on Ecosystem Services (ReDES) quantifies this exposure by assessing the share of a company's revenue that is functionally dependent on ecosystem services.

This score does not estimate the actual revenue loss that would occur in the event of an ecosystem service disruption. Instead, it highlights the portion of economic activity that is exposed to potential financial risks due to nature-related dependencies. By providing ReDES at multiple levels of aggregation, financial institutions can analyze dependencies in detail, from individual ecosystem services to broad economic sectors.

ReDES is available at three levels of granularity. At the ecosystem service level, with 25 data points, each corresponding to a specific ecosystem service. At the ecosystem service category level with 3 data points, aggregating provisioning, regulating, and cultural services. Across all ecosystem services with 1 data point representing overall exposure.

These aggregation levels enable financial institutions to examine ecosystem dependencies at the appropriate resolution for risk assessment and investment decisions.

C.1.1. Direct vs. Indirect Dependencies

Ecosystem service dependencies can be categorized into direct and indirect dependencies, which impact different parts of the value chain. Direct dependencies occur when a company's operations rely explicitly on an ecosystem service. For example, agriculture directly depends on pollination and soil quality to maintain crop yields. Indirect dependencies arise when ecosystem services affect suppliers (upstream dependencies) or customers (downstream dependencies).

C.1.2. Indirect Dependencies

C.1.2.1. Upstream Dependencies

Upstream dependencies refer to reliance on ecosystem services by suppliers. A manufacturing company, for example, may not directly use freshwater resources, but its suppliers in mining or agriculture might have a high dependency on water availability. If these suppliers experience disruptions, the manufacturer could face higher input costs or supply shortages.

C.1.2.2. Downstream Dependencies

Downstream dependencies involve reliance on ecosystem services by customers. A company producing luxury seafood products, for example, depends on consumers' access to marine biodiversity and healthy fish stocks. If ecosystem degradation reduces the availability of key species, consumer demand may decline, affecting the company's financial performance.

3.1.3 The ReDES score is calculated using an approach that identifies whether an activity is significantly dependent on a given ecosystem service.

At the company level, the revenue-weighted contribution of each segment is used to determine the final ReDES score.

This approach ensures that ReDES reflects exposure at the economic activity level, allowing companies and financial institutions to understand which revenue streams are most at risk.

Notation	Aggregation level & Legend	Relevance	Formula	Unit
$ReDES_{S_i,ES_j}$	● ES_j for Ecosystem Service j ● S_i *for* Segment i ● $D_{ES_j,}$ for Elementary dependency score	Intermediate	$ReDES_{S_i,ES_j} = 1_{D_{ES_j,\ S_i \geq D_{threshold}})}$	Boolean
$ReDES_{S_i,ES_{category}}$	● Across ecosystem services (ES) within ES category ● Segment ● ES category for Aggregation of ecosystem services into provisioning, regulating, or cultural categories	Intermediate	$ReDES_{S_i,ES_{category}} = 1_{\exists ES_j \in ES_{category}/D_{ES_j,\ S_i \geq D_{threshol}}}$	Boolean
$ReDES_{S_i}$	● Across all ES ● Segment	Intermediate	$ReDES_{S_i} = 1_{\exists j \in [\![1;26]\!]/D_{ES_j,\ i \geq D_{threshold}})}$	Boolean
$ReDES_{ES_j}$	● ES level ● Across segments i.e. company level ● R for revenues	Final data point	$\sum_{S_i} \frac{R_{S_i}}{R_{total}} \times ReDES_{S_i,ES_j}$	% (of total revenue)
$ReDES_{ES_{category}}$	● ES category level ● Across segments i.e. company level	Final data point	$\sum_{S_i} \frac{R_{S_i}}{R_{total}} \times ReDES_{S_i,ES_{category}}$	% (of total revenue)
$ReDES_{\Omega}$	● Across all ES ● Across segments i.e. company level ● Ω for aggregation across all ecosystem services	Final data point	$\sum_{S_i} \frac{R_{S_i}}{R_{total}} \times ReDES_{S_i}$	% (of total revenue)

Table 3: ReDES aggregation level and formulas

A company's exposure to ecosystem services does not automatically translate into financial distress—the severity of financial costs depends on whether adaptation is possible and how much it costs.

As outlined in ENCORE's dependency materiality ratings, financial costs due to ecosystem service disruptions are categorized as follows:

1. High dependency implies significant financial costs, but financial viability is not at risk.
2. Very high dependency implies that financial costs are severe enough to threaten financial viability.

For context, financial costs are considered a threat to financial viability when they exceed:

- 10-15% of annual revenue, making business continuity uncertain.
- 20-50% of EBIT (Earnings Before Interest and Taxes), significantly impacting profitability.
- Over 50% of Free Cash Flow (FCF), limiting reinvestment, debt repayment, or shareholder returns.

If adaptation costs remain below these thresholds, the business is likely to absorb them without severe consequences. However, for industries with high ReDES scores, even moderate financial costs can accumulate into substantial risks over time.

ReDES is a powerful tool for assessing financial exposure to nature-related risks, but it has inherent limitations. One key limitation is that it does not account for the likelihood of ecosystem service failure. The metric highlights exposure but does not predict when or where an ecosystem service will be disrupted. To achieve a complete risk assessment, companies must supplement this metric with geospatial and climate risk data. Another limitation is that ReDES does not distinguish between financial costs that threaten financial viability and those that do not. While it captures significant financial dependencies, it does not differentiate between risks that can be absorbed and those that require urgent intervention. A more nuanced approach—such as developing two separate scores for high versus very high dependency—was considered but deemed impractical due to data complexity.

Additionally, ReDES relies on ENCORE's dependency classifications, which provide a sector-level assessment but do not capture company-specific or location-based variations in dependency risks. This may limit the granularity of risk assessment for financial institutions and investors. The metric also applies a cut-off at "High" or "Very High" dependencies, meaning that dependencies rated as Medium or Low are not included in ReDES calculations, even though they may still pose financial

risks. To address this gap, the Average High Dependency Score (AHDS), which is discussed in the next section, provides additional insight into lower-intensity dependencies.

The ReDES metric enables financial institutions to answer critical risk-related questions. It helps assess what percentage of a company's activity is financially exposed to ecosystem service disruptions and determines which ecosystem services contribute most to a company's overall dependency risk. It also provides insight into how many ecosystem services a company relies on to maintain revenue stability and identifies which companies have at least a specific percentage of their revenue at risk due to nature dependencies. By integrating ReDES into financial models, portfolio assessments, and risk disclosures, companies can proactively manage nature-related financial risks and align their strategies with emerging sustainability regulations, such as the Taskforce on Nature-related Financial Disclosures (TNFD).

C.2. AHDS: Average High Dependency Score

The Average High Dependency Score (AHDS) is a numerical representation of a company's highest nature dependencies, ranging from 0 to 100. This metric provides a condensed view of a company's reliance on ecosystem services (ES), offering an accessible, high-level perspective on exposure to environmental risks. Unlike ReDES, which captures the share of a company's financial exposure to nature-related risks, AHDS focuses solely on the magnitude of dependency, regardless of financial risk quantification.

AHDS is derived from ENCORE's dependency materiality ratings and calculates the average dependency level across a company's six most significant ES dependencies. It is reported as a single datapoint at the issuer level, meaning that aggregation at broader levels—such as industry or sector—is not appropriate. The primary purpose of this score is to provide a comparative measure of issuers within a portfolio, enabling financial institutions and investors to quickly assess which companies exhibit the highest environmental dependencies.

The AHDS metric is constructed by averaging the six highest ES dependency scores for a given company. This ensures that companies with broad but moderate dependencies do not appear less reliant than companies with fewer but extreme dependencies. The calculation neutralizes null dependencies by only considering ES dependencies that rank among the top six for each issuer.

Notation	Aggregation level & legend	Relevance	Formula	Unit
$AHDS_{S_i}$	● Across all ES ● Segment	Intermediate	$AHDS_{S_i} = \frac{1}{6}\sum_{j=1}^{25} D_{ES_j} 1_{D_{ESj}\ in\ top\ 6\ dependencies}$	0-100
$AHDS$	● Across all ES ● Across segments i.e. company level ● R_{S_i} for Revenue of segment S_i	Final datapoint	$\sum_{S_i} \frac{R_{S_i}}{R_{total}} \times AHDS_{S_i}$	0-100

Table 4: AHDS aggregation level and formulas

The AHDS metric maintains a direct relationship with ReDES, though it serves a different purpose:

- If AHDS = 100, this implies that the company is highly dependent on at least six ES, each with a maximum dependency score. In this case, ReDES = 100%, meaning that all revenue is at risk from ES disruption.
- If AHDS ≥ 60, the company has a significant concentration of high ES dependencies, though it does not necessarily imply that all revenue is at risk.

Since AHDS is presented as a single numerical score, it provides a straightforward way to compare companies based on the extent to which they rely on multiple high-dependency ES. It highlights cases where a company accumulates several high dependencies within the same business segment, offering insight into potential environmental vulnerabilities.

For example, consider a company with one segment and various ES dependencies:

1. If the top six ES have dependency scores of 100, then AHDS = 100, indicating extreme dependency on multiple ES.
2. If the top six ES have dependency scores of 80, then AHDS = 80, suggesting high but slightly lower dependency.
3. If two ES score 100 and four ES score 60, then AHDS = 79, demonstrating partial but significant concentration of high dependency.
4. If three ES score 80 and three ES score 40, then AHDS = 60, indicating a balance between high and moderate dependencies.
5. If all six ES score 60, then AHDS = 60, but with ReDES = 0, highlighting that financial risk may still be low despite notable dependencies.

AHDS is inherently constrained by the ENCORE dependency materiality ratings, which only assess reliance on ES and do not account for ES failure risk. This means AHDS does not reflect spatial or location-based risks, meaning that two companies with identical scores could face very different actual environmental risks. AHDS does not consider ES default probability either, which could lead to misinterpretation of dependency severity.

Additionally, due to the aggregation method, AHDS may lose granularity when applied across multiple business segments. Specifically, since 26 elementary dependency datapoints are condensed into one score, different sets of raw dependency data can result in the same AHDS score, making it harder to interpret specific risk factors. For diversified companies with multiple segments, an intermediate AHDS score could reflect either:

- A high score in some segments and a low score in others (indicating potential concentration risk).
- A moderate score across all segments (indicating general but diffuse dependency).

The more diverse the company's operations, the less directly meaningful AHDS becomes, requiring additional analysis at the segment level.

Beyond Direct dependencies, AHDS also applies to Upstream and Downstream dependencies, covering suppliers and customers. This extension helps assess the cumulative ES dependencies across a company's value chain.

The Upstream AHDS calculation follows the same methodology as the Direct score but considers the ES dependencies of suppliers. The computation:

- Averages the Tier 2 sector dependencies and compares them to Tier 1 sector values.
- Takes the maximum between the Tier 1 and Tier 2 averages.
- Averages these maximum values across all upstream segments.

AHDS Upstream and Downstream scores are calculated similarly to reflect the cumulative environmental exposure along the supply chain.

D. Glossary

CSRD – Corporate Sustainability Reporting Disclosure: is a European Union directive that establishes a new reporting framework for listed and unlisted companies, ETIs (intermediate-sized companies), SMEs (small and medium-sized enterprises) and large corporations. It concerns all the environmental, social and governance (ESG) dimensions of their activities, and is linked to other important European Union regulations. Its objective is the socio-environmental reporting of companies.

ENCORE - Exploring Natural Capital Opportunities, Risks and Exposure: is a free, online tool that helps organisations explore their exposure to nature-related risk and take the first steps to understand their dependencies and impacts on nature.

GBF – Global Biodiversity Framework: was adopted during the fifteenth meeting of the Conference of the Parties (COP 15) following a four year consultation and negotiation process. This historic Framework, which supports the achievement of the Sustainable Development Goals and builds on the Convention's previous Strategic Plans, sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050.

IPBES - The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services: is an intergovernmental organization established to improve communication between science and policy on issues of biodiversity and ecosystem services. It serves a similar role to the Intergovernmental Panel on Climate Change (IPCC).

Millennium Ecosystem Assessment: is a major assessment of the human impact on the environment, called for by the United Nations Secretary-General Kofi Annan in 2000, launched in 2001 and published in 2005 with more than $14 million of grants. It popularized the term ecosystem services, the benefits gained by humans from ecosystems.

SFDR - Sustainable finance disclosure regulation: The regulation forms part of the EU's wider Sustainable Finance Framework which is backed by a broad set of new and enhanced regulations that apply across the 27-nation bloc. The SFDR goes hand in hand with the EU's Sustainable Finance Action Plan which aims to promote sustainable investment across the EU, and a new EU Taxonomy to create a level playing field across the whole EU

TNFD - The Taskforce on Nature-related Financial Disclosures: is a global, market-led initiative established in 2021 to develop a framework for organizations to identify, assess, manage, and disclose their dependencies and impacts on nature. Its primary goal is to integrate nature-related considerations into business and financial decision-making, thereby shifting financial flows toward nature-positive outcomes.

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