

Ocean Accounts and Private Sector Decision-Making

Helps corporate sustainability officers, risk officers and business analysts use Ocean Accounts for nature-related disclosure, supply chain risk and capital allocation.

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OUTCOME

After reading this Circular, corporate sustainability officers, chief risk officers and ocean-sector business analysts will be able to use nationally compiled Ocean Accounts as a structured data source for private sector decision-making: nature-related financial disclosure, supply chain risk assessment, capital allocation and corporate strategy. The Circular explains how national account outputs translate into enterprise-relevant signals about ocean dependencies, impacts, risks and opportunities.

Section 3.2 works the TNFD LEAP process through phase by phase, naming the account each phase draws on. Section 3.3 is the publication’s single source for the mapping between account outputs and the TNFD, IFRS S1 and CSRD disclosure requirements. Section 3.4 covers supply chain exposure, Section 3.6 capital allocation and ocean opportunity, and Section 3.7 scans applications still at an early stage.

Section 3.5 addresses the constraint that governs all of it: national accounts are compiled at country or large sub-national scale, whilst corporate reporting requires site-level data. The disaggregation and attribution methods are specified in [TG-3.11 Sub-National Ocean Accounts](#) Sections 3.1 to 3.4; what this Circular sets out is what a firm must ask of the national statistical office before relying on a disaggregated figure, and which services support a defensible attribution rather than a contribution estimate.

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ABOUT THIS CIRCULAR

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DRAFT

¶1 ⓘ Framework Position

¶2 This Circular addresses how private sector corporations use nationally compiled Ocean Accounts data to identify nature-related dependencies and impacts, inform disclosure under TNFD and IFRS S1, and integrate ocean risk into capital allocation and supply chain decisions. It sits at the intersection of the public finance guidance in TG-1.7 OA and Multilateral Development Finance and TG-1.8 OA and Project-Level Finance and the investment indicator compilation in TG-2.6 Ocean-related Investment, extending both toward the enterprise level.

1. Outcome

¶1 After reading this Circular, corporate sustainability officers, chief risk officers and ocean-sector business analysts will be able to use nationally compiled Ocean Accounts as a structured data source for private sector decision-making: nature-related financial disclosure, supply chain risk assessment, capital allocation and corporate strategy. The Circular explains how national account outputs translate into enterprise-relevant signals about ocean dependencies, impacts, risks and opportunities.

¶2 Section 3.2 works the TNFD LEAP process through phase by phase, naming the account each phase draws on. Section 3.3 is the publication's single source for the mapping between account outputs and the TNFD¹, IFRS S1² and CSRD³ disclosure requirements. Section 3.4 covers supply chain exposure, Section 3.6 capital allocation and ocean opportunity, and Section 3.7 scans applications still at an early stage.

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2. Requirements

¶1 **Essential prerequisites:**

- ¶2 **TG-0.1 General Introduction to Ocean Accounts** – for the conceptual framework, key components, and scope of Ocean Accounts

¶3 **Helpful background:**

- ¶4 **TG-1.7 OA and Multilateral Development Finance** – for the disclosure framework context (TNFD, IFRS S1) and how development finance institutions engage with ocean data. Section 3.4 of TG-1.7 is directly relevant
- ¶5 **TG-1.8 OA and Project-Level Finance** – for project-level instrument structuring (blue bonds, PES, debt swaps) and TNFD alignment at the asset level
- ¶6 **TG-2.6 Ocean-related Investment** – for ocean investment indicator compilation and the GFCF framework that underlies sustainable finance product design

¶7 Readers approaching Section 1 for the first time should begin with **TG-1.0 Ocean Accounting and the Blue/Ocean Economy**, the framing circular for the section, which sets out the ocean economy terminology used throughout, what an ocean account can and cannot certify about a blue economy claim, and the map from a policy question to the circular that answers it. It is recommended reading, not a prerequisite.

3. Guidance Material

3.1 Why Ocean Accounts Matter for the Private Sector

¶1 Private sector actors are ocean-dependent across a wider range of industries than is commonly recognised. The **ocean economy** accounts for approximately USD 1.5 trillion of value added per year globally (2010 baseline estimate), supporting over 30 million full-time equivalent jobs.⁴ It spans fisheries, aquaculture, marine transport, offshore energy, coastal tourism, marine biotechnology, and coastal construction. The economy-wide dependencies extend well beyond these direct-use sectors, as documented in **TG-2.2 Macro-economic Dependencies on Ocean Ecosystems**. Marine and coastal ecosystems supply services that underpin land-based economic activities. Coastal ecosystems provide storm and flood protection that reduces insurance losses and infrastructure costs. Ocean carbon cycling regulates climate stability that shapes agricultural productivity. Marine biodiversity underpins pharmaceutical discovery, and ocean fisheries supply protein that supports global food system resilience.

¶2 The TNFD defines **nature-related risks** as “the potential threats posed to an organisation as a result of its or others’ dependencies and impacts on nature.”⁵ These risks manifest as:

- ¶3 **Physical risks** – disruptions to business operations and supply chains arising from ecosystem degradation (e.g., coral reef decline reducing coastal protection, marine pollution undermining aquaculture production, fisheries stock collapse affecting food processors)
- ¶4 **Transition risks** – policy, regulatory, and market changes as societies respond to nature loss (e.g., carbon pricing, marine protected area expansion, sustainable fisheries certification requirements)
- ¶5 **Systemic risks** – non-linear and potentially catastrophic shifts in ecosystem function that exceed the adaptive capacity of individual firms and financial systems

¶6 Ocean Accounts provide the systematic baseline data against which these risks can be assessed. These accounts compile spatially explicit stock and flow information about ocean natural capital at the national and subnational level, the scale at which physical and transition risks originate.

¶7 ⓘ Concrete Application

¶8 A seafood processor with sourcing operations in a coastal country can cross-reference its sourcing locations with national ecosystem condition accounts to identify whether fish stocks and water quality indicators in those areas are stable, declining, or recovering. Unavailable at the project or firm level, this systemic data anchors a TNFD LEAP assessment in nationally standardised information, which ad hoc monitoring data cannot supply on its own.

3.2 The TNFD LEAP Framework Applied to Ocean Contexts

¶1 The TNFD recommends that organisations use its **LEAP** process (Locate, Evaluate, Assess, Prepare) to identify and assess nature-related issues across their business activities and value chains.⁶ Each phase of LEAP can be structured using Ocean Accounts data. Figure 1.11.1 illustrates how the different Ocean Account types feed each LEAP phase as a many-to-many relationship rather than one account per phase, distinguishing the principal account input for each phase from account types also drawn upon.

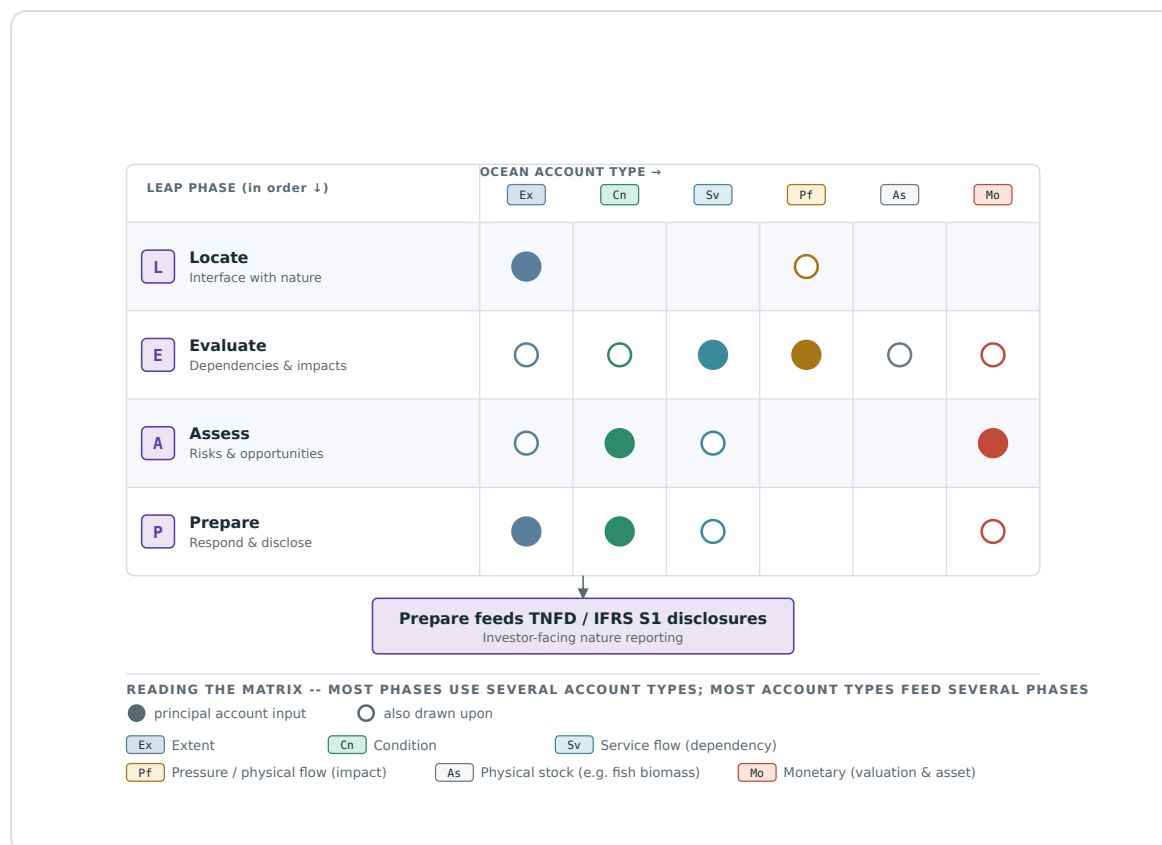


Figure 1.11.1 Ocean Account types map many-to-many onto TNFD LEAP phases, with principal and secondary inputs marked per cell. [a] Solid mark (●) = principal input. [b] Ring (○) = also drawn upon. Account chips follow Figure 1.2.1.

Source: TG-1.11 §3.2.1--3.2.4 (LEAP-Ocean Account interface); Tables 3.2.2 and 3.3.1; §3.4 (supply chain ocean risk).

Adapted from: TNFD Recommendations and LEAP approach guidance v1.0 (September 2023), Section 4 (the LEAP approach).

3.2.1 Locate – Identifying Business-Ocean Interfaces

¶1 The first LEAP phase requires identifying where in the world business activities and value chains interact with ocean and coastal ecosystems. Ocean Accounts support this phase through:

- ¶2 **Ecosystem extent accounts:** Nationally compiled spatial data on the distribution of marine habitat types (mangroves, coral reefs, seagrass meadows, open ocean, shelf ecosystems) against which business facility locations and sourcing geographies can be overlaid
- ¶3 **Priority area identification:** TNFD recommends identifying locations in or adjacent to biodiversity-sensitive areas, including marine protected areas and Key Biodiversity Areas (KBAs).⁷ Ecosystem extent accounts compiled within national Ocean Accounts frameworks typically incorporate protected area boundaries and can be queried to determine whether business activities fall within or near ecologically significant zones
- ¶4 **Catchment-to-coast linkages:** Many ocean-affecting business activities occur inland. Residual flow accounts in Ocean Accounts track nutrient and pollutant loads reaching coastal waters, enabling firms with upstream agricultural, industrial, or urban operations to assess their downstream ocean footprint

3.2.2 Evaluate – Assessing Dependencies and Impacts

¶1 The second LEAP phase evaluates the nature of the firm's dependencies on, and impacts to, ocean ecosystems at the identified interfaces. Ocean Accounts support this phase through two complementary pathways. The account types referenced here are compiled using the methods described in **TG-3.1 Asset Accounts**.

¶2 **Dependency assessment** draws on ecosystem service supply and use tables to quantify the contribution of marine natural capital to business inputs. Key dependency types for ocean-adjacent sectors include:

¶3 *Table 3.2.2: Ocean ecosystem dependencies by sector and relevant Ocean Account components.*

Sector	Ocean Ecosystem Dependency	Relevant Account Type
Capture fisheries (wild-catch)	Fish stock biomass, ocean productivity, trophic structure	Flow accounts, condition accounts, asset accounts
Aquaculture	Water quality, nutrient cycling, coastal hydrodynamics	Flow accounts, condition accounts
Coastal tourism	Beach quality, coral reef condition, biodiversity	Condition accounts, cultural service flows
Marine transport	Port access, dredging requirements, storm exposure	Extent accounts, condition accounts
Coastal construction	Shoreline stability, sediment supply, flood exposure	Condition accounts, regulating service flows
Offshore energy	Seabed stability, marine spatial availability, corrosion risk	Extent accounts, condition accounts
Pharmaceuticals / biotech	Marine biodiversity, species inventories	Condition accounts, extent accounts
Insurance / reinsurance	Coastal protection services, storm damage exposure	Regulating service flow accounts

¶4 **Impact assessment** draws on physical flow accounts (pressures) to quantify the firm's contribution to changes in ocean ecosystem state. The TNFD defines impacts as "changes in the state of nature (quality or quantity), which may result in changes to the capacity of nature to provide social and economic functions."⁸ Ocean Accounts record the aggregate pressure signals, such as total nutrient loading, total extraction volumes relative to sustainable yield, and total extent change, against which individual firm contributions can be contextualised. For firms where ecosystem impacts require formal assessment, the methodological bridge between project-level environmental impact assessment and nationally compiled account baselines is described in **TG-1.6 OA and Environmental Impact Assessment**.

3.2.3 Assess – Quantifying Nature-Related Risks and Opportunities

¶1 The third LEAP phase translates dependency and impact findings into material risks and opportunities. Ocean Accounts support risk quantification in two ways.

¶2 **Trend-based risk signals:** Time-series accounts reveal whether ocean natural capital is stable, declining, or recovering. A firm whose supply chain depends on coral reef-based tourism can read declining coral condition indicators, compiled across national extent and condition accounts, as a direct signal of increasing physical risk to its revenue base, without needing to commission bespoke environmental monitoring.

¶3 **Valuation of service dependencies:** Monetary ecosystem service accounts compile exchange-value estimates of the economic contribution of marine natural capital to production. These valuations show the scale of the economic contribution at stake from ecosystem degradation. They are not estimates of the financial loss a firm would bear, which depends on how far and how fast a service declines and on the firm's own exposure and response⁹. A coastal hotel group can, for example, use the replacement cost of coral reef coastal protection services (compiled in the monetary ecosystem service flow account), scaled to the stretch of coast it occupies, as a starting point for estimating the capital cost of the engineered protection it would need if reef degradation removed that natural protection; its insurance costs depend instead on expected storm damage at its own sites.

¶4 Alongside risk quantification, the Assess phase identifies **nature-related opportunities**. For private sector actors, ocean-related opportunities include:

- ¶5 Access to sustainable ocean finance products (blue bonds, nature performance bonds) that offer preferential terms to borrowers demonstrating credible ocean stewardship data, as described in **TG-1.8 OA and Project-Level Finance**
- ¶6 Market access and reputational premiums for sustainable seafood certifications backed by Ocean Account condition indicators
- ¶7 New revenue streams from blue carbon markets, nature-based solutions, and ecosystem service payments
- ¶8 Cost reduction through supply chain resilience built on ecosystem health rather than degrading natural capital stocks

3.2.4 Prepare – Strategy, Disclosure, and Targets

¶1 The fourth LEAP phase translates assessment findings into disclosures, strategies, risk management actions, and targets. Section 3.3 addresses disclosure frameworks, and Section 3.4 addresses capital allocation and targets.

3.3 Corporate Disclosure: TNFD, IFRS S1, and CSRD

¶1 Three parallel disclosure trajectories are converging toward a common set of requirements: voluntary (TNFD), standards-based (IFRS), and regulatory (CSRD/ESRS). This section is the single source for the mapping between ocean account outputs and disclosure requirements; **TG-1.7** and **TG-1.8** cross-refer to it rather than restating it. Ocean Accounts compiled at the national level provide the population-level data that makes corporate disclosures internationally comparable and independently verifiable.

3.3.1 TNFD Recommended Disclosures

¶1 The TNFD September 2023 recommendations specify 14 disclosures structured around four pillars: Governance, Strategy, Risk and Impact Management, and Metrics and Targets.¹⁰ For ocean-dependent or ocean-affecting businesses, the most material disclosures map directly onto Ocean Account components. The table below lists the disclosures of greatest relevance to ocean contexts. Firms should consult the full TNFD recommendations for the complete set of 14 required disclosures.

¶2 *Table 3.3.1: TNFD recommended disclosures most relevant to ocean-dependent businesses (selected from the full set of 14 recommended disclosures).*

Pillar	TNFD Disclosure	Description	Ocean Account Source
Strategy	Strategy A	Nature-related dependencies, impacts, risks, and opportunities	Ecosystem service supply and use tables; condition accounts
Strategy	Strategy B	Effect on business model and value chain	Flow accounts linking ocean inputs to sectoral outputs
Strategy	Strategy C	Resilience of strategy to nature-related scenarios	Time-series trend data from extent and condition accounts
Strategy	Strategy D	Locations of assets in priority areas	Ecosystem extent accounts with MPA and KBA overlays

Pillar	TNFD Disclosure	Description	Ocean Account Source
Risk & Impact Mgmt	Risk A(i), A(ii)	Processes for identifying, assessing and prioritising nature-related issues in direct operations (A(i)) and in the value chain (A(ii))	LEAP process supported by nationally compiled account baselines
Metrics & Targets	Metrics A	Metrics used to assess and manage nature-related risks and opportunities	Change in ecosystem condition and extent over time
Metrics & Targets	Metrics B	Metrics used to assess and manage dependencies and impacts on nature	Condition indicators, extent indicators, service flow volumes
Metrics & Targets	Metrics C	Targets and performance against targets	Account-derived baselines enabling target-setting and monitoring

¶3 The three Governance disclosures (Gov A: Board oversight of nature-related issues; Gov B: Management's role in assessing and managing nature-related issues; Gov C: human rights policies and engagement with Indigenous Peoples, Local Communities and affected stakeholders) are structural governance requirements that apply uniformly across all sectors and are not specific to Ocean Account data inputs. Similarly, Risk B (processes for managing nature-related issues) and Risk C (integration into overall risk management) describe internal management systems rather than ecosystem data requirements, and are omitted from the table. The nine disclosures shown above are those where Ocean Account data provides the most direct input.

¶4 The TNFD also defines **additional global disclosure metrics** relevant to ocean contexts, including metrics for water quality, marine ecosystem extent, and the value of sustainable finance instruments.¹¹ Ocean Account condition and extent tables provide a direct data source for these metrics, converting nationally standardised environmental monitoring data into enterprise-level disclosure inputs.

¶5 **Sector-specific TNFD pathways:** The TNFD has published sector-specific additional guidance for a range of sectors including aquaculture, fisheries, marine transport, and coastal infrastructure, among others. These sector pathways cross-reference SEEA EA concepts directly, making Ocean Accounts a natural data input to sector-aligned TNFD reporting.

3.3.2 IFRS S1 and Nature-Related Financial Information

¶1 IFRS S1 (General Requirements for Disclosure of Sustainability-related Financial Information), issued June 2023 and effective for annual reporting periods beginning on or after 1 January 2024, establishes that sustainability-related information should be material to the primary users of general-purpose financial reports – investors, lenders, and other creditors.¹² Application is voluntary or jurisdiction-dependent, as national adoption by securities regulators is required for mandatory application. Nature-related dependencies and impacts qualify as material when they affect an entity's cash flows, access to finance, or cost of capital. (IFRS S2 on climate-related financial information is a separate standard. For ocean-climate accounting connections, see **TG-2.8 Climate Change Indicators**.)

¶2 For ocean-dependent businesses, material nature-related information under IFRS S1 typically includes:

- ¶3 **Value chain dependencies:** Quantified reliance on marine provisioning services (fish stock productivity, water quality for aquaculture) that generate revenue or underpin cost structures
- ¶4 **Physical risk exposure:** Estimated financial exposure to ecosystem degradation translating into supply disruption, infrastructure damage, or increased operating costs
- ¶5 **Transition risk exposure:** Revenue at risk from marine resource use regulation, sustainable certification requirements, or carbon pricing affecting ocean industries

- ¶6 **Opportunities:** Quantified upside from sustainable ocean finance, ecosystem service revenues, and nature-positive supply chain premiums

¶7 Ocean Accounts provide the population-level time series against which entity-level IFRS S1 disclosures can be contextualised and verified.¹³

3.3.3 CSRD Double Materiality and Ocean Dependencies

¶1 The European Union's CSRD (in force from January 2024 for large listed companies, with phased application extending to 2026 for smaller in-scope entities) requires companies to conduct a **double materiality assessment**: evaluating both how sustainability matters affect the company (financial materiality) and how the company affects sustainability matters (impact materiality).¹⁴ The European Sustainability Reporting Standards (ESRS) elaborate specific requirements for biodiversity and ecosystem-related disclosures under ESRS E4 (Biodiversity and Ecosystems).

¶2 ESRS E4 requires disclosure of:

- ¶3 Material locations where business activities interface with biodiversity-sensitive areas
- ¶4 Drivers of biodiversity change attributable to business activities (land and sea use change, pollution, resource use, invasive species, climate change)
- ¶5 Targets and metrics related to ecosystem extent and condition

¶6 Ocean Accounts compiled for coastal and marine areas provide a direct data source for ESRS E4 compliance by European companies with ocean-facing operations or supply chains. Condition indicators from national ecosystem accounts can populate the ecosystem condition metrics required under ESRS E4, whilst extent accounts document changes in marine habitat area attributable to sectors in which a company operates.

¶7 Across TNFD, IFRS S1, and CSRD, the common requirement is for ecosystem baseline data that is spatially explicit, compiled against recognised methodologies, and comparable across time. Firm-level environmental monitoring data cannot meet all three requirements at once. Nationally compiled Ocean Accounts can.

3.3.4 Standardised impact indicator templates

¶1 This section provides templates for deriving impact indicators from Ocean Accounts that satisfy the requirements of three major frameworks: the Taskforce on Nature-related Financial Disclosures (TNFD), the IFRS Sustainability Disclosure Standards (S1 and S2), and the Convention on Biological Diversity (CBD) Global Biodiversity Framework Target 15.

¶2 **TNFD-aligned indicators.** The TNFD recommends disclosure of dependencies and impacts on nature across four realms (land, ocean, freshwater, atmosphere). For ocean contexts, Ocean Accounts provide direct measurement of the core TNFD metrics:

TNFD Metric Category	Ocean Account Source	Indicator	Unit
Extent of ecosystems	Ecosystem extent accounts	Change in ecosystem area by type	Hectares
Condition of ecosystems	Ecosystem condition accounts	Condition index relative to reference	Index (0-1)
Dependencies on ecosystem services	Physical supply and use tables	Value of ecosystem service inputs to economic activity	Currency units per year
Impacts on ecosystems	Physical flow accounts	Pollutant loads, extraction rates	Tonnes per year
Value at stake	Asset accounts (monetary)	NPV of ecosystem assets exposed to degradation	Currency units

¶3 **IFRS S1/S2-aligned indicators.** IFRS S1 requires disclosure of sustainability-related risks and opportunities that could reasonably be expected to affect an entity's cash flows, access to finance, or cost of capital. IFRS S2 addresses climate-related disclosures specifically. Ocean Accounts support these disclosures by providing:

IFRS Requirement	Ocean Account Source	Application
Governance over sustainability risks	Institutional arrangements for account compilation	Demonstrates structured oversight of environmental data
Strategy: dependencies and impacts	Supply and use tables, condition accounts	Quantifies nature dependencies and transition risks
Risk management processes	Time-series account compilation	Provides systematic monitoring of nature-related risk indicators
Metrics: GHG emissions (S2)	Carbon stock and flow accounts (context only)	Does not supply the metric: IFRS S2 para 29(a) requires the entity's own Scope 1, 2 and 3 emissions, measured under the GHG Protocol Corporate Standard. National blue carbon accounts give context for an entity's land-use emissions and removals, reported separately
Metrics: transition plan targets	Extent and condition target accounts	Provides measurable benchmarks for nature-positive targets

¶4 **CBD Target 15 indicators.** CBD Target 15 requires that large and transnational businesses and financial institutions regularly monitor, assess, and transparently disclose their risks, dependencies, and impacts on biodiversity. Ocean Accounts provide the measurement infrastructure for Target 15 compliance by enabling businesses to:

- ¶5 Identify and quantify dependencies on marine biodiversity using ecosystem service supply and use tables
- ¶6 Monitor impacts on marine ecosystems through changes in extent and condition accounts
- ¶7 Report on risks using monetary asset accounts that show the exchange value of ecosystem assets at stake from biodiversity loss (not the financial loss an entity would bear)
- ¶8 Disclose progress against nature-positive commitments using standardised account-derived metrics

¶9 **Template for integrated impact reporting.** Practitioners preparing impact reports for ocean-related investments can use the following template structure, with each metric sourced directly from Ocean Account tables:

Impact Domain	Metric	Baseline Value	Current Value	Target	Account Table Reference
Ecosystem extent	Area of target ecosystem (ha)	[from extent accounts]	[from extent accounts]	[project target]	SEEA EA Table 4.1
Ecosystem condition	Condition index (0-1 scale)	[from condition accounts]	[from condition accounts]	[project target]	SEEA EA Table 5.1
Carbon sequestration	Annual sequestration (tCO ₂ e/yr)	[from carbon accounts]	[from carbon accounts]	[project target]	SEEA CF Table 3.4
Economic contribution	Value added from ocean sector (currency)	[from economic accounts]	[from economic accounts]	[project target]	SNA Table 14.1

Impact Domain	Metric	Baseline Value	Current Value	Target	Account Table Reference
Social outcomes	Employment in ocean sectors (persons)	[from employment accounts]	[from employment accounts]	[project target]	SNA Table 19.1

¶10 For the underlying extent and condition accounts, see **TG-3.1 Asset Accounts** and **TG-2.1**. Development finance applications of the same templates are in **TG-1.7**; project-level instruments in **TG-1.8**.

3.4 Supply Chain Ocean Risk Assessment

¶1 For many firms, the most material ocean-related risks arise not in direct operations but in supply chains. Global supply chains for seafood, agricultural commodities, raw materials, and manufactured goods intersect with ocean ecosystems through production locations, shipping routes, port infrastructure, and water use. Ocean Accounts enable firms to map and quantify supply chain exposure to ocean ecosystem risk.

¶2 **Mapping supply chain exposure:** The first step in supply chain ocean risk assessment is identifying which supply chain nodes interact with ocean or coastal ecosystems. For seafood and aquaculture supply chains, direct identification is straightforward. For other commodity supply chains, the interactions are often indirect (coastal port exposure, river-to-ocean nutrient loading from agricultural inputs, offshore industrial effluent). Ocean Accounts, particularly residual flow accounts and extent accounts, provide the spatial context needed to assess where supply chain node geographies coincide with ecologically significant or deteriorating marine areas.

¶3 **Quantifying exposure:** Once supply chain nodes are mapped to ocean ecosystem contexts, condition and trend data from Ocean Accounts enable quantification of:

- ¶4 The share of sourcing volumes exposed to declining ecosystem conditions
- ¶5 The proportion of supply chain nodes located in areas where national accounts record increasing pressure relative to carrying capacity
- ¶6 The time horizon over which current extraction or land-use trajectories are consistent with sustainable ecosystem function, based on trends in stock accounts

¶7 **Industry-specific applications:** The following sectors illustrate how supply chain ocean risk assessment draws on specific Ocean Account components:

¶8 *Seafood and aquaculture:* Fish stock accounts and ecosystem condition indicators compiled within national Ocean Accounts frameworks provide the most direct data source for assessing fishery health. Condition indicators including spawning stock biomass, mean trophic level, and the proportion of stocks fished within sustainable limits are derivable from well-compiled national accounts. Firms can use these indicators to segment their sourcing portfolio by sustainability risk, informing supplier engagement and procurement policy.

¶9 *Agricultural commodities:* Crops grown in coastal watersheds contribute to coastal eutrophication through fertiliser runoff. National residual flow accounts track nutrient loads reaching coastal waters at the catchment level. Firms sourcing from coastal agricultural regions can use these accounts to identify high-risk sourcing areas and engage suppliers on nutrient management practices.

¶10 *Marine transport and logistics:* Port infrastructure faces increasing physical risk from sea level rise, intensified storm events, and coral reef degradation (which affects wave attenuation). Coastal infrastructure accounts and regulating service flow accounts compiled within national Ocean Accounts frameworks document trends in coastal protection service capacity. These trends give logistics operators a basis for assessing port-level physical risk exposure.

¶11 *Financial services (insurance and lending)*: Insurers and lenders with portfolios exposed to coastal real estate, fisheries, aquaculture, or marine infrastructure face physical and transition risk from ocean ecosystem change. Ocean Accounts compiled at the national level provide the standardised, time-series ecosystem trend data that enables portfolio-level screening for nature-related risk concentration. Banks and asset managers also face **lender liability** risk where financing is extended to borrowers whose operations contribute to marine ecosystem degradation. Ocean Account pressure data can inform pre-lending due diligence and ongoing portfolio monitoring for such exposures.

3.5 Connecting National Ocean Accounts to Corporate Reporting

¶1 ⚠ Common Misconception

¶2 National Ocean Accounts are compiled at the country or large subnational scale and are not designed to report data at the level of an individual firm or site, whilst this does not render them irrelevant to corporate reporting: the spatial disaggregation and attribution methods described in this section allow nationally compiled data to be translated into enterprise-relevant inputs.

¶3 A central challenge for private sector users of Ocean Accounts is the **scale mismatch**: national accounts are compiled at country or large subnational levels, whilst corporate reporting typically requires asset-level or site-level data.

3.5.1 Spatial disaggregation and attribution

¶1 The method for disaggregating national totals to a site or sourcing geography, and for attributing a share of area totals to a single firm, is set out in **TG-3.11 Sub-National Ocean Accounts** Sections 3.1 to 3.4. Firms should not construct their own downscaling: an overlay performed without the reconciliation TG-3.11 Section 3.2 requires produces site-level figures that do not sum back to the national totals they were derived from, which is precisely what makes a disclosure unverifiable.

¶2 Three questions to put to the national statistical office or ocean management agency before relying on disaggregated figures:

- ¶3 **At what resolution are the relevant accounts compiled**, and is that fine enough to resolve the firm's sites or sourcing areas?
- ¶4 **Has the disaggregation been reconciled to national totals**, and by what method?
- ¶5 **What denominator should a firm-level share be expressed against**, and for which services is a reported-volume attribution available rather than a contribution estimate?

¶6 For provisioning services with harvest or extraction reporting, a firm's share of national extraction is a defensible attribution. For regulating and cultural services it is not: those rest on contribution analysis and should be disclosed as approximations, with the basis stated. Where TNFD sector guidance or Science Based Targets Network methods specify an ocean attribution approach, those take precedence.

3.5.2 Temporal alignment

¶1 National Ocean Accounts are compiled on an annual or multi-year basis. Corporate reporting cycles (annual reports, sustainability reports) require current-year data. In countries with regular account compilation cycles, firms can typically access recent-period account data. In countries where accounts are less frequently updated, firms may need to extrapolate from the most recent compilation using supplementary indicator data or to flag the data vintage in their disclosures. Firms should document the data vintage and spatial resolution of Ocean Account data used in disclosures, consistent with IFRS S1 requirements for transparency about data quality and limitations.¹⁵

3.6 Capital Allocation and Ocean Opportunity

¶1 **Sustainable ocean finance access:** As described in **TG-1.8 OA and Project-Level Finance**, blue bonds, sustainability-linked bonds, and debt-for-nature instruments offer preferential financing terms to borrowers whose activities demonstrate credible, measurable ocean stewardship. Firms that have already conducted Ocean Account-grounded dependency and impact assessments are well-positioned to access these instruments, because the baseline and monitoring data required by instrument covenants is already compiled. The investment indicator framework in **TG-2.6 Ocean-related Investment** describes how ocean-related investment is tracked at the national level, providing context for benchmarking firm-level capital allocation against national and sectoral trends.

¶2 **Ecosystem service revenue:** In jurisdictions with active payment for ecosystem services (PES) schemes or carbon markets, firms that protect or restore coastal and marine ecosystems can generate revenue from ecosystem service payments. Ocean Accounts underpin the baseline and additionality assessments required by PES and carbon market protocols. Firms operating in the aquaculture, coastal tourism, or offshore energy sectors frequently have the spatial presence and management authority over coastal and marine ecosystems that is required to participate in PES and blue carbon markets, as further described in **TG-6.2 Mangrove and Coastal Wetland Accounting**.

¶3 **Biodiversity offsetting:** In jurisdictions where regulatory or voluntary frameworks require businesses to offset residual biodiversity impacts, Ocean Account condition and extent data provide the measurement baseline needed to quantify impact and verify the ecological integrity of offset sites. Specifically, national ecosystem condition indicators serve as the reference state against which the additionality of proposed offset activities is assessed. This application is growing as national regulators adopt no-net-loss or net-gain policies for marine development. These policies create demand for standardised, independently verifiable baseline data that national Ocean Accounts are well placed to supply.

¶4 **Nature-positive supply chain premiums:** Consumer markets increasingly reward sustainable sourcing through certification premiums (Marine Stewardship Council, Aquaculture Stewardship Council) and retailer procurement preferences. Ocean Account condition indicators aligned with certification sustainability criteria, particularly fish stock status and ecosystem condition, can provide the third-party verifiable baseline data that certification bodies increasingly require.

¶5 **Strategic positioning in the nature economy:** The Kunming-Montreal Global Biodiversity Framework (GBF) Target 15 calls on businesses and financial institutions to regularly monitor, assess, and transparently disclose nature-related dependencies, impacts, risks, and opportunities by 2030.¹⁶ The GBF also sets Target 19 to mobilise at least USD 200 billion per year for biodiversity finance by 2030, from all sources (public and private), with private sector mechanisms expected to contribute a growing proportion of this total.

3.7 Horizon Scan: Emerging Applications

¶1 Several application areas are at early-stage development but are likely to become material within the planning horizon of major corporations and financial institutions. Methods and markets are still developing. The degree to which Ocean Accounts will fulfil these roles depends on continued investment in national account compilation and private sector capacity.

¶2 **Portfolio-level nature risk screening:** Asset managers and institutional investors are beginning to develop ocean-specific portfolio screening tools that draw on national ecosystem trend data to identify listed equities and debt securities with material exposure to ocean ecosystem deterioration. Country-level and regional ecosystem condition information drawn from Ocean Accounts could populate these screening tools, supplementing the company-level disclosure data that currently dominates ESG screening, though the integration of national account data into commercial screening platforms remains at an early stage.

¶3 **Nature-related stress testing:** Financial supervisors in several jurisdictions are exploring nature-related scenario analysis and stress testing requirements, analogous to climate-related stress tests. Ocean ecosystems feature prominently in these scenarios, particularly coral reef collapse, fisheries stock depletion, and sea level rise affecting coastal collateral. Ocean Accounts time-series data may inform the physical scenario inputs for ocean-realm stress tests, potentially providing statistically grounded trajectories of ecosystem change, where sufficiently compiled and temporally consistent national series exist.

¶4 **Supply chain due diligence regulation:** The EU Deforestation Regulation and emerging due diligence frameworks in other jurisdictions are creating legal obligations for firms to demonstrate that supply chains do not contribute to ecosystem destruction, including marine ecosystem degradation. Due diligence verification systems could draw on national-level baseline and monitoring data from Ocean Accounts to assess whether sourcing geographies are consistent with sustainable ecosystem management, though the specific regulatory uptake of national account data for this purpose is not yet established in most jurisdictions. For the EIA-linked aspects of due diligence, see also **TG-1.6 OA and Environmental Impact Assessment**.

¶5 **Nature credits and biodiversity offsets:** Voluntary biodiversity credit markets are emerging alongside established carbon markets. These markets create a potential new asset class linked to marine biodiversity outcomes. Biodiversity credit protocols may rely on Ocean Accounts condition and extent data as the measurement infrastructure needed to verify additionality, permanence, and ecological integrity of ocean-based credits. Standardisation of measurement methodologies, currently a major barrier to voluntary biodiversity credit market development, is expected to converge on SEEA EA-aligned approaches over the medium term, though this convergence is not yet assured.

¶6 **Corporate natural capital accounting:** A small but growing number of corporations are beginning to integrate natural capital accounting into internal decision-making, valuing their dependencies on ecosystem services as part of capital budgeting and project appraisal. Ocean Accounts may provide the unit value reference data (ecosystem service values per hectare by ecosystem type) that corporate natural capital accounts require. Firms could then populate internal accounts without commissioning bespoke ecosystem service valuations for each decision, subject to the availability and spatial coverage of national monetary accounts.

4. Acknowledgements

¶1 **Authors:** [Names and affiliations]

¶2 **Reviewers:** [Names and affiliations]

5. References

1. ¶1 TNFD. (2023). *Recommendations of the Taskforce on Nature-related Financial Disclosures* (v1.0). September 2023. <https://tnfd.global/recommendations-of-the-tnfd/> (<https://tnfd.global/recommendations-of-the-tnfd/>)
2. ¶2 ISSB. (2023). *IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information*. International Sustainability Standards Board. June 2023. Effective for annual reporting periods beginning on or after 1 January 2024.
3. ¶3 European Commission. (2022). *Corporate Sustainability Reporting Directive (CSRD)*. Directive 2022/2464/EU. European Parliament and of the Council. December 2022.
4. ¶4 OECD. (2016). *The Ocean Economy in 2030*. OECD Publishing, Paris. The USD 1.5 trillion figure is a widely cited estimate for ocean economy GVA based on 2010 data; updated estimates vary by scope and methodology.
5. ¶5 TNFD. (2023). *Recommendations of the Taskforce on Nature-related Financial Disclosures*, Glossary. p. 71.
6. ¶6 TNFD. (2023). *Recommendations of the Taskforce on Nature-related Financial Disclosures*, Section 4: The TNFD LEAP approach. pp. 38–49.
7. ¶7 TNFD. (2023). *Recommendations of the Taskforce on Nature-related Financial Disclosures*, Strategy Disclosure D: Locations of assets and activities in areas at high risk or sensitive areas. p. 27.

8. ¶8 TNFD. (2023). *Recommendations of the Taskforce on Nature-related Financial Disclosures*, Glossary. p. 71. See also discussion in **TG-1.6 OA and Environmental Impact Assessment**, Section 3.2.
9. ¶9 Bradley, C., Taylor, S., Vardon, M., Lyons, M., Clement, S., & Obst, C. (2026). *Tracking nature dependencies and nature-related risks: integrated environmental-economic accounting in Australia* [Preprint, not peer reviewed; version 1, 19 September 2026], §4, pp. 16–17. SocArXiv. https://doi.org/10.31235/osf.io/mq6bv_v1 (https://doi.org/10.31235/osf.io/mq6bv_v1). The paper’s discussion notes that the economic exposures tracked by accounts do not necessarily represent the monetary value of the economic or financial impacts of nature-related risks being realised, and that further analysis and modelling may be needed.
10. ¶10 TNFD. (2023). *Recommendations of the Taskforce on Nature-related Financial Disclosures*, Table 2: Recommended Disclosures. pp. 24–30. The 14 recommended disclosures span four pillars: Governance (2), Strategy (4), Risk and Impact Management (4), and Metrics and Targets (4).
11. ¶11 TNFD. (2023). *Recommendations of the Taskforce on Nature-related Financial Disclosures*, Annex 3: Additional Global Disclosure Metrics. Including Metric A16.0 on sustainable finance instruments.
12. ¶12 ISSB. (2023). *IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information*, para 2. International Sustainability Standards Board.
13. ¶13 United Nations et al. (2025). *System of National Accounts 2025*, Chapter 34. Para. 34.XX [to be confirmed on publication of final text].
14. ¶14 European Commission. (2022). *Corporate Sustainability Reporting Directive (CSRD)*, Directive 2022/2464/EU, Article 19a (Double materiality). The double materiality assessment process is elaborated in EFRAG. (2023). *ESRS 1 General Requirements*, Section 3.1 (Double materiality), and EFRAG. (2023). *ESRS 2 General Disclosures*, Appendix A.
15. ¶15 ISSB. (2023). *IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information*, paras 58–69 (Information quality). International Sustainability Standards Board.
16. ¶16 Convention on Biological Diversity. (2022). *Kunming-Montreal Global Biodiversity Framework*, Target 15. CBD/COP/DEC/15/4. December 2022.

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