

Ocean-related Investment

Provides guidance on compiling indicators of ocean-related investment within the Ocean Accounts framework.

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OUTCOME

This Circular provides guidance on compiling indicators of ocean-related investment within the Ocean Accounts framework. Understanding the scale, composition, and trends of ocean-related investment enables policymakers to assess whether sufficient resources are being directed towards sustainable ocean development and conservation, including the targets set under SDG 14.7 (increasing economic benefits from the sustainable use of marine resources) and SDG 14.5 (conserving at least 10 per cent of coastal and marine areas).

Upon completing this Circular, readers will understand how to measure gross fixed capital formation (GFCF) in ocean industries using thematic and extended accounting principles from the System of National Accounts, compile indicators of public and private ocean investment disaggregated by sector and purpose, track sustainable ocean finance instruments including blue bonds and ESG-classified marine investments, and develop investment tracking methodologies that integrate physical and monetary data. Decision use cases for these indicators include tracking the effectiveness of blue bond proceeds in achieving marine conservation targets, measuring ocean-related GFCF as a share of national capital formation to inform infrastructure planning, and aligning investment reporting with TNFD and IFRS sustainability disclosure frameworks. The guidance supports the compilation of investment indicators consistent with SNA 2025 concepts that can be linked to [TG-0.1 General Introduction](#), [TG-0.2 Standards Overview](#), and the economic activity accounts in [TG-3.3 Economic Activity Relevant to the Ocean](#).

Investment indicators derived from this guidance support analysis of ocean economy development pathways ([TG-2.5 Ocean Economy Structure](#)), sustainable finance monitoring ([TG-1.7 OA and Multilateral Development Finance](#) and [TG-1.8 OA and Project-Level Finance](#)), and resource efficiency assessment ([TG-2.11 Resource Efficiency](#)).

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ABOUT THIS CIRCULAR

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DRAFT

1. Outcome

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¶3 Investment indicators derived from this guidance support analysis of ocean economy development pathways (**TG-2.5 Ocean Economy Structure**), sustainable finance monitoring (**TG-1.7 OA and Multilateral Development Finance** and **TG-1.8 OA and Project-Level Finance**), and resource efficiency assessment (**TG-2.11 Resource Efficiency**).

2. Requirements

¶1 This Circular requires familiarity with:

- ¶2 **TG-0.1 General Introduction to Ocean Accounts** – for the conceptual framework and key components of Ocean Accounts
- ¶3 **TG-0.2 Standards Overview** – for the international statistical standards underpinning ocean accounting, including SNA 2025, SEEA, and classification systems
- ¶4 **TG-3.3 Economic Activity Relevant to the Ocean** – for the ocean economy thematic and extended accounting framework, industry classifications, and supply and use table structures that provide the foundation for investment measurement

3. Guidance Material

¶1 Investment in the ocean economy encompasses the acquisition of fixed assets by enterprises and government for the production of ocean-related goods and services, as well as targeted expenditure on marine environmental protection and ecosystem restoration. This Circular applies the GFCF framework from the System of National Accounts, supplemented by functional classifications for environmental expenditure and emerging standards for sustainable finance reporting.

3.1 Ocean Investment Framework

¶1 Investment in the ocean context can be organised into three conceptual categories that reflect different motivations, sources, and measurement approaches. This three-category framework provides a useful analytical structure but is not formally standardised in the SNA or SEEA. Countries

may adapt these categories based on national policy priorities, provided that classification choices are documented to support transparency and comparability across compilations.

Where the classification rules are specified

¶1 Four classification decisions govern what an ocean investment compilation may count, and all four are specified in **TG-3.3 Economic Activity Relevant to the Ocean** Section 3.6: the basic/intermediate/extended **scope tiers**; the **capitalisation decision tree** for restoration expenditure, which determines whether mangrove planting or reef restoration is GFCF or current expenditure; **residence and economic ownership** for vessels and offshore installations, including the flags-of-convenience and ABNJ cases; and the **GFCF/EPEA boundary rule** that prevents coastal protection structures being counted twice.

¶2 Two of these bear directly on how the indicators below should be read. A compilation at basic tier should not be presented as exhaustive of ocean-related investment. And the scope tiers are orthogonal to the data-maturity pathway in Section 3.5 (Foundational, Developing, Advanced): the first says what to measure, the second what a compiler can produce from available data. A country at an early data-maturity stage may still target extended scope, and conflating the two understates what a compilation is aiming at.

Ocean Investment Classification Table

¶1 Table 1 provides an overview of the principal types of ocean-related investment, their treatment in the SNA framework, illustrative ocean examples, and typical data sources for compilation.

¶2 **Table 1: Ocean Investment Classification**

Investment Type	SNA Treatment	Ocean Examples	Data Source
Private GFCF	Produced assets	Vessels, processing facilities	Business surveys
Government GFCF	Public infrastructure	Ports, coastal protection	Government finance
FDI	Capital flows	Offshore platforms, hotels	Balance of payments
R&D investment	Intellectual property	Marine research	R&D surveys
Restoration	Varies by nature of expenditure (apply decision tree above)	Mangrove planting, reef restoration	Project records

Relationship to national accounts

¶1 Ocean investment indicators are derived from the broader national accounts framework and should be consistent with national totals. The ocean economy thematic and extended account structure described in **TG-3.3 Economic Activity Relevant to the Ocean** provides the organising framework. Within this structure:

- ¶2 Ocean economy GFCF represents the subset of total national GFCF attributable to ocean industries
- ¶3 Environmental expenditure for ocean protection represents a functional classification of expenditure that may cross multiple industries
- ¶4 Sustainable ocean finance represents a supplementary classification of financial instruments by purpose

Spatial and jurisdictional considerations

¶1 Investment measurement follows the residence principle of the SNA, attributing investment to the economic territory where the producing unit is resident. The governing attribution principle is economic ownership: the residence of the institutional unit that bears the economic risk and

reward associated with the asset, not the flag of registration. For ocean activities, this creates specific considerations:

- ¶12 Investment in vessels operated by a resident economic owner is attributed to the country of residence of that owner, regardless of the flag under which the vessel is registered.
- ¶13 Offshore installations within a country's Exclusive Economic Zone (EEZ) are treated as being within the economic territory of the coastal state.
- ¶14 Investment by non-resident enterprises operating under licence within the EEZ (such as foreign fishing fleets) is attributed to the country of residence of the enterprise.

¶15 **Worked example – flags of convenience.** A vessel legally registered in Country A (an open registry), economically owned by an enterprise resident in Country B, and operated under a bareboat charter to a fishing company resident in Country C, is attributed to Country B for GFCF purposes, as Country B's enterprise bears the economic risk and holds title to the asset. Country A records no GFCF for the vessel. Its open-registry function does not confer economic ownership. For compilers in jurisdictions with large open registries or large beneficial-ownership shipping sectors, this distinction is material. See BPM7 Chapter 4 (Institutional Units and Sectors, Economic Territory, and Residence), paragraphs 4.214–4.220, for the corresponding treatment in external sector statistics.

¶16 The treatment of maritime investments has been clarified in SNA 2025, which provides guidance on the economic ownership of ships and offshore structures². For areas beyond national jurisdiction (ABNJ), the 2025 SNA notes that “where there is interest in organising data about these types of natural capital outside of the scope of the integrated framework of the SNA ... the accounting definitions and treatments of the integrated framework of the SNA and the SEEA can be applied”³. That approach is relevant for investment in activities spanning EEZ and high seas areas. The entry into force of the BBNJ Agreement on 17 January 2026 may introduce new governance arrangements with implications for statistical treatment of investment in ABNJ. Compilers should monitor developments in this area and consult **TG-6.6 Deep-Sea and ABNJ** for further guidance on accounting for activities in these zones⁴.

¶17 **Interim guidance for ABNJ-adjacent investment.** Pending updated guidance from GOAP or the UN Statistics Division on BBNJ-related statistical treatment, compilers preparing 2025 and 2026 ocean accounts should:

1. ¶18 Apply the SNA residence principle as the default rule: investment in ABNJ-related activities (deep-sea mining, high-seas fishing, BBNJ-linked biodiversity offset instruments) is attributed to the economic territory of the investing institutional unit.
2. ¶19 Flag ABNJ-related investment as a separate memorandum item beneath the main ocean investment totals, so that future revision is straightforward when authoritative guidance is issued.
3. ¶10 Retain full documentation of classification decisions (instrument, activity location, residence determination, taxonomy applied) to enable retrospective revision.

3.2 Public Investment Indicators

¶1 Measurement of public investment draws on government finance statistics and the Classification of the Functions of Government (COFOG).

Government GFCF in ocean industries

¶1 Table 3.2.1 below summarises the principal categories of government capital formation in ocean industries.

Category	Examples
Port and harbour infrastructure	Wharves, breakwaters, navigational aids, port terminals.
Coastal protection structures	Sea walls, groynes, beach nourishment works.
Marine research facilities	Oceanographic research stations, research vessels, monitoring infrastructure.

Category	Examples
Fisheries management assets	Patrol vessels, monitoring systems, hatchery facilities.
Maritime safety assets	Lighthouses, coast guard facilities, search and rescue equipment.

¶2 Where government GFCF is recorded by function using COFOG, the following classes are relevant to ocean investment⁵:

- ¶3 COFOG 04.5 – Transport (including maritime transport infrastructure)
- ¶4 COFOG 04.2 – Agriculture, forestry, fishing and hunting (including fisheries management)
- ¶5 COFOG 05.3 – Pollution abatement (including marine pollution control)
- ¶6 COFOG 05.4 – Protection of biodiversity and landscape (including marine conservation)
- ¶7 COFOG 02.1 – Military defence (including naval assets, where separately identifiable)

¶8 **Isolating maritime transport within COFOG 04.5.** The international COFOG standard halts at the 4-digit class level (04.5.2 Water transport), and in most countries COFOG 04.5 as a whole aggregates road, rail, air, and water transport spending. To isolate the maritime component, compilers should triangulate using supplementary administrative sources, including:

- ¶9 Transport ministry project lists and capital programme documentation, filtered for port, harbour, dredging, and navigational projects
- ¶10 Port authority capital accounts and annual reports
- ¶11 Maritime safety authority budgets (lighthouses, coast guard, vessel traffic services)
- ¶12 Where available, national or regional COFOG extensions that disaggregate water transport from inland-waterway, rail, road, and air components (for example, Eurostat national compilation manuals provide such extensions for EU member states)

¶13 There is no UN-issued fourth-level standard disaggregation for maritime transport within COFOG 04.5. Any sub-class breakdown is a national or regional statistical extension and should be documented as such.

¶14 The Statistical Framework for Measuring the Sustainability of Tourism (SF-MST) notes that “government gross fixed capital formation may also be classified using COFOG and hence data for expenditures following the same classes ... may be available”⁶. This approach can be adapted for ocean economy measurement. Guidance on integrating government fiscal classifications with ocean accounts is provided in **TG-1.1 Budget Processes**, which addresses COFOG concordances and the mapping of budget line items to ocean economy categories.

Government environmental expenditure for ocean protection

¶1 The SEEA Central Framework’s Environmental Protection Expenditure Account (EPEA) can be adapted for marine contexts. Table 3.2.2 below summarises relevant expenditure categories for ocean protection.⁷

Category	Description
Wastewater management	Treatment of coastal and marine wastewater, prevention of marine pollution from land-based sources.
Waste management	Collection and treatment of marine debris, coastal cleanup operations.
Protection of biodiversity and landscapes	Marine protected area management, species conservation, habitat restoration.
Research and development	Marine environmental research, development of ocean-friendly technologies.

¶2 Government environmental protection expenditure encompasses both current expenditure (operational costs of protection activities) and capital expenditure (investment in environmental protection infrastructure and equipment). The SEEA defines total national expenditure on environmen-

tal protection as including final consumption, intermediate consumption, and gross fixed capital formation on all environmental protection goods and services, plus capital formation for characteristic activities, plus relevant transfers⁸.

Indicator examples

¶1 From the public investment data, the following indicators can be derived:

Indicator	Description	Unit
Government GFCF in ocean industries	Total government capital formation in ocean-related assets	Currency units
Government ocean GFCF as share of total government GFCF	Relative intensity of ocean investment	Percentage
Government expenditure on marine environmental protection	Current and capital expenditure for marine protection purposes	Currency units
Government marine protection expenditure per km of coastline	Investment intensity relative to coastal extent	Currency units per km
Government marine protection expenditure per km ² of EEZ	Investment intensity relative to marine territory	Currency units per km ²
Government investment in marine protected area management	Capital formation specifically for MPA infrastructure	Currency units

3.3 Private Investment Indicators

¶1 Measurement of private investment draws on business survey data, administrative records, and estimation techniques that identify the ocean-related component of broader industry investment.

Corporate GFCF in ocean industries

¶1 Following the industry classification approach in **TG-3.3 Economic Activity Relevant to the Ocean**, private sector GFCF can be compiled for core ocean industries and ocean-related industries.

¶2 **Core ocean industries** where investment is entirely ocean-related:

- ¶3 Division 03 (Fishing and Aquaculture) – vessels, nets, aquaculture pens, processing equipment
- ¶4 Division 50 (Water Transport) – ships, port equipment, navigation systems
- ¶5 Class 0610/0620 (Offshore Petroleum) – platforms, drilling equipment, pipelines
- ¶6 Offshore renewable energy – wind turbines, tidal installations, foundations

¶7 **Ocean-related industries** where the ocean component of investment must be estimated:

- ¶8 Class 1020 (Fish Processing) – processing plants and equipment for marine products
- ¶9 Class 3011/3012 (Shipbuilding) – shipyards, construction equipment, dry docks
- ¶10 Class 5222 (Port Services) – cargo handling equipment, terminal facilities
- ¶11 Coastal tourism – accommodation facilities with marine access, marine recreation equipment

¶12 For industries only partially related to the ocean, the methods for determining ocean-related shares described in **TG-3.3 Economic Activity Relevant to the Ocean** (specifically, the supply-use approach for estimating ocean ratios) can be applied to investment data. Important methodological caveats on applying GVA-derived ocean ratios to GFCF are set out in Section 3.5 Step 3.

Types of ocean-related assets

¶1 For ocean industries, relevant fixed asset categories include⁹:

Fixed asset category	Ocean-relevant examples
Dwellings and buildings	Coastal commercial buildings, port facilities, processing plants.
Other structures	Breakwaters, offshore platforms, aquaculture structures.
Transport equipment	Vessels of all types, offshore supply vessels, submersibles.
Machinery and equipment	Fishing gear, processing machinery, navigation equipment.
Intellectual property products	Marine research and development, software for ocean applications.

¶2 **Inventories** (not GFCF but relevant for ocean economy measurement):

- ¶3 Work-in-progress (fish in aquaculture pens approaching harvest)
- ¶4 Finished goods inventories (processed seafood products)

¶5 Table 2 provides an illustrative asset breakdown for the aquaculture sector to demonstrate how investment can be disaggregated by asset type within a single ocean industry. This template can be adapted by compilers for other ocean sectors.

¶6 **Table 2: Illustrative Asset Breakdown – Aquaculture Sector Investment**

Asset Type	Examples	Typical Share ¹⁰
Other structures	Ponds, cages, pens, raceways	30–50%
Machinery and equipment	Feeding systems, aeration, grading	15–25%
Transport equipment	Harvest boats, feed delivery vessels	5–15%
Buildings	Hatcheries, processing sheds, cold storage	10–20%
Intellectual property	Breeding programmes, aquaculture R&D	5–10%

WARNING – do not use as default imputations. The ranges in Table 2 are presented for orientation only. They reflect cross-country variability across species, production systems, and stages of sector development, and **must not be used as default imputations** where national data are absent. Compilers without national survey or registry data on aquaculture asset composition should report the disaggregation as “not available” rather than substituting these ranges, and should source actual shares from national capital expenditure surveys, aquaculture census data, or sector-specific appraisal records before publication.

Investment in environmental technologies

¶1 Corporate investment in environmental protection technologies represents a specific component of ocean-related GFCF. Such investment is sometimes called “end-of-pipe” or “integrated”. The SEEA distinguishes¹¹:

- ¶2 **End-of-pipe investments** – technologies that treat or control emissions and discharges after they are generated (e.g., ballast water treatment systems, exhaust gas cleaning systems)
- ¶3 **Integrated investments** – modifications to production processes that prevent or reduce pollution at source (e.g., fuel-efficient vessel designs, sustainable aquaculture systems)

¶4 These investments contribute to both ocean economy development and marine environmental protection. They sit at the nexus of the economic and environmental dimensions of ocean accounting. The SEEA notes that “estimating the expenditure on integrated investments requires consideration of the general concerns in respect of measuring adapted goods” including the challenge of defining reference technologies against which “cleaner” alternatives can be compared¹².

Indicator examples

¶2 From the private investment data, the following indicators can be derived:

Indicator	Description	Unit
Private GFCF in ocean industries	Total corporate capital formation in ocean-related assets	Currency units
Private ocean GFCF as share of total private GFCF	Relative intensity of ocean investment	Percentage
Ocean industry GFCF by sector	Investment disaggregated by fishing, shipping, offshore energy, etc.	Currency units
Ocean GFCF as share of ocean GVA	Investment intensity relative to sector output	Percentage
Environmental technology investment in ocean industries	GFCF in pollution control and cleaner technologies	Currency units
Shipbuilding GFCF	Investment in vessel construction capacity	Currency units

3.4 Sustainable Ocean Finance Indicators

¶1 Sustainable ocean finance (often termed “blue finance”) comprises financial instruments where proceeds are directed to activities that sustain or improve marine and coastal environmental conditions¹³. This includes:

¶2 **Blue debt securities – use-of-proceeds instruments** – debt where proceeds are earmarked for ocean-positive activities:

- ¶3 Blue bonds issued by sovereigns, corporates, or development banks
- ¶4 Green bonds with marine-focused use of proceeds

¶5 **Blue debt securities – performance-linked instruments (extended scope)** – debt whose classification depends on the issuer’s stated ocean-related performance targets rather than the use of capital raised:

- ¶6 Sustainability-linked bonds (SLBs) with ocean-related key performance indicators

¶7 **Blue loans** – loans where a significant share of the debtor’s activities improve marine environmental conditions:

- ¶8 Loans to sustainable fisheries enterprises
- ¶9 Loans for marine renewable energy projects
- ¶10 Loans for coastal ecosystem restoration

¶11 **Blue equity** – equity investments in enterprises whose activities predominantly improve marine conditions:

- ¶12 Investment in sustainable aquaculture
- ¶13 Investment in ocean cleanup technologies
- ¶14 Investment in marine biotechnology

¶15 The SNA recommends that sustainable finance be compiled as supplementary “of which” items within the financial accounts. That treatment allows tracking without disrupting the standard accounts structure¹⁴. The classification follows Table 35.3 of SNA 2025, which distinguishes debt securities, loans, equity, and investment fund shares/units, with “of which” items for ESG and green classifications.

¶16 **Distinguishing use-of-proceeds from performance-linked instruments.** Blue bonds and earmarked blue loans direct identified capital to ocean-positive activities. Sustainability-linked bonds (SLBs), by contrast, have general use of proceeds with coupon step-ups (or other financial features) tied to the issuer meeting defined KPIs. An SLB with an ocean-related KPI signals issuer commitment but does not direct capital to ocean activities. If the KPI is missed, the coupon increases but the proceeds remain unaffected. For this reason:

- ¶17 Use-of-proceeds instruments are recorded in the basic blue-finance scope.

- ¶18 SLBs with ocean KPIs are recorded as an extended scope memorandum item, distinct from use-of-proceeds totals, and labelled as reflecting stated issuer commitment rather than confirmed capital allocation. See the ICMA Sustainability-Linked Bond Principles for the conceptual distinction.

Minimum classification protocol for blue finance instruments

¶1 In the absence of a single agreed international blue finance taxonomy, compilers should apply the following three-tier minimum classification protocol so that figures are comparable across countries and over time even before harmonisation:

1. ¶2 **Reported blue finance (self-labelled)** – record all instruments self-labelled by the issuer as “blue” or “ocean” (sovereign blue bond, blue loan, etc.) regardless of external verification. This is the broadest tier and provides headline reach.
2. ¶3 **Verified blue finance** – a subset of (1) for which a second-party opinion provider or a recognised certification scheme has confirmed alignment with a published standard (e.g., the IFC/ICMA Bonds to Finance the Sustainable Blue Economy guidance, the Climate Bonds Initiative Water Infrastructure or Marine Renewable Energy criteria, the EU Taxonomy criteria for sustainable use and protection of water and marine resources).
3. ¶4 **Criteria-documented blue finance** – where no applicable taxonomy or verification exists in the issuer’s jurisdiction, the compiler should document the specific criteria applied (use of proceeds, activity list, exclusion list) and report under this tier.

¶5 A standard metadata template should accompany each published blue finance figure, recording instrument type, issuer name and sector, jurisdiction, taxonomy or criteria applied, verification status, use-of-proceeds versus performance-linked treatment, reporting period, and whether the figure is a stock or a flow. This follows the metadata transparency expectation in SNA 2025 paragraph 35.125¹⁵.

¶6 At the time of drafting, no universally agreed “blue finance” taxonomy exists at the international level, although several regional standards provide partial coverage. The EU Taxonomy for sustainable activities includes technical screening criteria for activities contributing to the sustainable use and protection of water and marine resources, and several other jurisdictions are developing similar standards. Compilers should document which definitions and taxonomies are applied in their compilations and monitor developments in international standard-setting for blue finance classification to support future comparability¹⁶.

Measurement challenges

Challenge	Description
Definitional ambiguity	Unlike green finance more broadly, “blue finance” lacks universally agreed taxonomies or certification standards; compilers must document which definitions are applied (see protocol above).
Self-labelling versus verification	Instruments may be self-labelled as “blue” by issuers, verified by second-party opinion providers, or certified against standards; the SNA notes that “a combination of approaches, potentially country specific, will need to be adopted” and that “to combat concerns about ‘greenwashing’, it is important to provide meta-data indicating the levels of assurance provided” ¹⁵ .
Attribution of multi-purpose instruments	Green bonds with mixed use of proceeds (some marine, some terrestrial) require allocation methodologies.
Stock versus flow measurement	Both the outstanding stock of blue instruments and the transactions (issuance) during a period are of analytical interest. Tables 3 and 4 below present stock and flow measures in clearly demarcated panels following IMF balance-sheet conventions.

Challenge	Description
International dimensions	Blue bonds may be issued in international markets and held by non-resident investors; the Balance of Payments and International Investment Position Manual (BPM7) provides guidance on recording these flows ¹⁷ .

Linking finance to outcomes

¶1 Measurement of sustainable ocean finance is most useful when linked to environmental outcomes. The SNA 2025 notes that “to support assessments of the effectiveness of sustainable finance, it is relevant to present data on the levels of investment in ESG and green activities ... alongside data about the outcomes arising from that activity”¹⁸. For marine contexts, this means presenting blue finance data alongside:

- ¶2 Changes in ecosystem extent (hectares of marine protected areas, mangrove coverage)
- ¶3 Changes in ecosystem condition (coral reef health indices, water quality indicators)
- ¶4 Changes in ecosystem service flows (sustainable fish catch, coastal protection services)

¶5 This integration is addressed in **TG-3.1 Assets** and **TG-3.2 Flows from the Environment to the Economy**. Detailed guidance on structuring project-level blue finance instruments, including blue bonds, debt-for-nature swaps, and results-based finance, is provided in **TG-1.8 OA and Project-Level Finance**. This Circular focuses on the indicator derivation and statistical measurement aspects. Compilers should consult TG-1.8 for instrument-specific design and structuring guidance.

TG-2.6 to TNFD / IFRS / GRI indicator crosswalk

¶1 Ocean Accounts compiled under TG-2.6 provide a macro-level baseline against which entity-level sustainability disclosures by financial institutions and corporates can be contextualised. The crosswalk below maps TG-2.6 headline indicators to the corresponding entity-level metrics in TNFD, IFRS S2, and GRI 304 (with GRI 101: Biodiversity 2024 noted as the successor standard where adoption proceeds).

TG-2.6 indicator	TNFD metric	IFRS S2 / IFRS S-series	GRI disclosure
Blue bond issuance (flow)	A16.0 – Value of nature-related green finance instruments used ¹⁹	IFRS S2 paras on transition plan financing (where ocean-linked)	GRI 304-2 / GRI 101 (location-based disclosures)
Blue bond outstanding stock	A16.0 (stock dimension)	IFRS S-series ESG financial instrument disclosures	GRI 304-2 / GRI 101
Ocean GFCF in environmental technologies	C7.3 – Capital expenditure, financing or investment deployed towards nature-related opportunities ²⁰	IFRS S2 (capex aligned with transition opportunities)	GRI 304-3 / GRI 101 (habitats protected or restored)
Government expenditure on marine environmental protection	C7.3 (public-sector application)	n/a	GRI 304-3 / GRI 101
Blue finance per km ² of EEZ	Contextual macro metric for A16.0 disclosures	n/a	GRI 101 (location-based context)

¶2 Entity-level reporters use TG-2.6 indicators to (i) contextualise their own ocean-related disclosures against the national baseline, (ii) report consistent jurisdictional coverage of ocean activities, and (iii) demonstrate consistency between firm-level and national investment trends. For the institutional and instrument-level dimensions of this linkage, see **TG-1.7 OA and Multilateral Development Finance** and **TG-1.8 OA and Project-Level Finance**.

Indicator examples

¶13 From sustainable ocean finance data, the following indicators can be derived. Use-of-proceeds and performance-linked instruments are reported in separate rows to preserve their distinct analytical meaning.

Indicator	Description	Unit
Blue bond outstanding stock (use of proceeds)	Total value of use-of-proceeds blue bonds outstanding at end of period	Currency units
Blue bond issuance (use of proceeds, flow)	Value of new use-of-proceeds blue bonds issued during period	Currency units
Blue loans outstanding	Stock of loans meeting blue finance criteria	Currency units
Blue finance as share of total sustainable finance	Ocean-focused sustainable finance relative to all ESG/green finance	Percentage
Blue finance per km ² of EEZ	Investment intensity relative to marine territory	Currency units per km ²
Blue finance by issuer type	Disaggregated by sovereign, corporate, MDB issuers	Currency units
Memorandum: SLBs with ocean-related KPIs (extended scope)	Value of SLBs with ocean-related performance targets (general use of proceeds)	Currency units

3.5 Investment Tracking Methodology

¶1 Effective tracking of ocean investment requires integration of multiple data sources, consistent application of classification criteria, and documentation of methods to ensure comparability over time and across countries.

Tiered compilation pathway

¶1 The full seven-step procedure below assumes balanced supply-use tables, capital expenditure surveys, EPEA returns, and securities-market data, infrastructure that many small island developing States (SIDS) and least developed countries (LDCs) do not yet maintain. This Circular therefore sets out a three-tier pathway. Compilers should declare which tier their compilation reaches, and progress through the tiers as national statistical infrastructure develops.

¶2 These data-maturity tiers (Foundational, Developing, Advanced) describe *what a compiler can produce given available data*. They are distinct from, and orthogonal to, the normative scope tiers in Section 3.1 (Basic, Intermediate, Extended), which describe *what to measure*. The labels deliberately differ to prevent the two axes being conflated: a country at an early data-maturity stage may still target extended scope. Figure 2.6.1 depicts this data-maturity compilation pathway and the capabilities added at each tier.

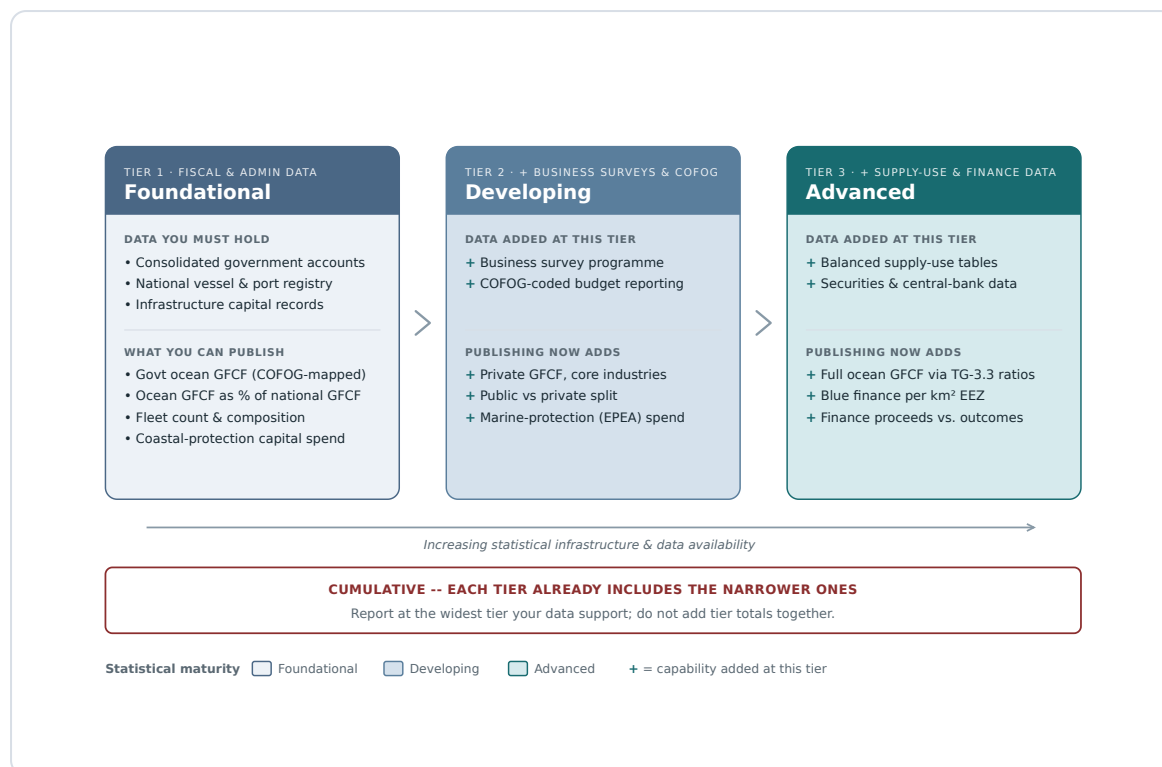


Figure 2.6.1 Ocean-investment compilation advances by cumulative data-maturity tiers from fiscal sources to supply-use GFCF tracking. Plus marks added capability; tiers are cumulative -- do not sum tier totals. Orthogonal to normative scope tiers.

Source: TG-2.6 §3.5 (tiered compilation pathway).

Adapted from: SNA 2025 §10.6--10.30 (Gross Fixed Capital Formation); SEEA CF Chapter 4 (EPEA); SF-MST §3.91 (COFOG GFCF).

- ¶3 **Foundational tier (fiscal accounts and administrative data).** Achievable in any country with consolidated government accounts and a national vessel registry. Outputs: government GFCF in ocean industries from budget execution data and COFOG-mapped expenditure lines, vessel-count and fleet-composition indicators from the registry, and coastal protection capital spending from infrastructure ministry records. This tier delivers a publishable headline indicator set without business surveys or SUTs.
- ¶4 **Developing tier (business surveys and COFOG-mapped expenditure).** Adds private-sector GFCF for core ocean industries (fishing/aquaculture, water transport, offshore energy) from existing business surveys or business-register-linked tax data, and a COFOG-aligned breakdown of government environmental protection expenditure. Requires a functioning business survey programme and COFOG-coded budget reporting.
- ¶5 **Advanced tier (full SUT-derived GFCF plus sustainable finance tracking).** Implements all seven steps below, including application of TG-3.3 ocean ratios to partially ocean-related industries and compilation of blue finance indicators from securities-regulator and central-bank data.

¶6 The seven-step procedure that follows is written for the Advanced tier. Foundational and Developing compilers apply only the steps relevant to their available data sources, and document the limitation explicitly in methodological notes.

Compilation procedure

¶1 **Step 1: Identify ocean industries.** Identify relevant ocean industries following the procedure in **TG-3.3** Section 3.4, to which **TG-2.5** defers its Steps 1–5.

¶2 **Step 2: Extract GFCF data from national accounts.** From the balanced national supply and use tables, extract the GFCF column for each identified ocean industry. If national SUTs aggregate in-

dustries above the ISIC class level, use supplementary business surveys or administrative records to disaggregate the relevant investment data. The GFCF column in the Use Table (see **TG-3.3** Section 3.4, Table 1) provides investment by product category, and the GFCF row by industry provides investment by producing industry.

¶3 **Step 3: Apply ocean economy ratios – documented fallback method.** For partially ocean-related industries where direct GFCF data are unavailable, multiply the GFCF by the ocean economy ratio estimated in TG-3.3. For example, if 40 per cent of coastal accommodation output serves marine tourism, apply a 0.40 ratio to the GFCF in accommodation.

***Methodological caveat.** The ocean ratios in TG-3.3 are typically derived from output or GVA data. Applying them to GFCF assumes that the ocean sub-segment of a partial industry has the same capital intensity as the non-ocean sub-segment of the same ISIC class. This proportionality assumption is known to fail where the ocean sub-segment is structurally more or less capital-intensive than its non-ocean counterpart. For example, ocean-facing coastal accommodation tends to have higher per-unit capital than inland accommodation in the same ISIC class, and fish processing plants serving marine catch may differ in equipment intensity from those serving freshwater species.*

¶4 For this reason:

- ¶5 **Preferred method.** Where capital expenditure surveys, port and vessel registry investment records, or industry-specific GFCF data exist, use these to identify ocean-related GFCF directly. The GVA-ratio approach should be reserved as a fallback.
- ¶6 **Plausibility check.** Where the ratio approach is used, compare the derived ocean GFCF share against known sub-industry characteristics (e.g., capital-output ratios for the same activity in countries with direct measurement, or against alternative sources such as port authority capital programmes) and document any material divergence.
- ¶7 **Quality flag.** Compilers should flag the use of the GVA-derived ratio assumption as a known quality limitation in the methodological notes, consistent with the quality assessment dimensions in this section.

¶8 **Step 4: Disaggregate investment by asset type.** Using business survey data or administrative records (vessel registries, port authority investment plans), disaggregate ocean economy GFCF into asset categories: dwellings and buildings, other structures, transport equipment (vessels), machinery and equipment, and intellectual property products. This disaggregation follows the SNA asset classification (SNA 2025 Chapter 11) and enables analysis of the composition of ocean investment.

¶9 *Vessel valuation – methods for converting registry data to monetary GFCF.* Vessel registries typically record physical characteristics (gross tonnage, deadweight, build year, vessel type) rather than monetary value. To convert physical fleet additions into GFCF-compatible monetary values, compilers can apply one or more of the following methods, in approximate order of consistency with SNA GFCF measurement:

1. ¶10 **Administrative declared value at registration.** Where the maritime authority requires declaration of acquisition value at registration, this is the simplest source. Quality depends on declaration compliance.
2. ¶11 **New-build price indices** (e.g., Clarkson Research *Shipping Review and Outlook*, or equivalent broker indices). Apply ship-type-specific new-build prices to new-registration counts. This approach is most consistent with SNA GFCF measurement at current market prices.
3. ¶12 **Enterprise book value.** Use book values from audited financial statements of vessel-owning enterprises, where reachable through business register linkage. Book values reflect accounting

depreciation rather than economic depreciation.

4. ¶13 **Perpetual inventory method (PIM)** applied to historical investment series with assumed service lives. The method is useful for stock estimates and for filling gaps in flow data.

¶14 For integration of registry, administrative, and survey sources, see **TG-4.3**

Administrative Data.

¶15 **Step 5: Compile government ocean investment from fiscal data.** Extract government GFCF from government finance statistics, identifying ocean-related functions using COFOG classes (04.2, 04.5, 05.3, 05.4) and applying the Section 3.2 guidance for isolating the maritime component of COFOG 04.5 and avoiding GFCF/EPEA double counting. Compile government environmental protection expenditure (current and capital) for marine purposes from EPEA data sources. The methodological guidance in **TG-1.1** Section 3.3 addresses the mapping of COFOG classes to ocean functions.

¶16 **Step 6: Compile sustainable ocean finance indicators.** Identify blue bonds, blue loans, and other sustainable finance instruments from financial market data, central bank statistics, and securities regulator records. Classify instruments using the three-tier protocol in Section 3.4 (self-labelled, verified, criteria-documented), keeping use-of-proceeds instruments and SLBs with ocean KPIs in separate rows. Document the taxonomy or criteria applied (e.g., EU Taxonomy, Climate Bonds Initiative marine criteria, ICMA blue economy guidance).

¶17 **Step 7: Reconcile and validate.** Ensure that the sum of ocean economy GFCF by industry is consistent with (though not necessarily identical to) the corresponding industries' investment in the broader national accounts. Document any adjustments made for ocean-specific estimation. Validate totals against alternative data sources (e.g., vessel registry investment records, port authority financial statements).

Worked example: Synthetic ocean investment tracking

¶1 Table 3 presents a worked example showing how ocean investment indicators can be compiled and presented for a hypothetical coastal state ("Country B"). All monetary values are in millions of USD. Stocks and flows are presented in separate panels and are not directly comparable: flow measures relate to transactions during the reporting period, whilst stock measures relate to the position at end of the reporting period.

¶2 **Table 3: Ocean Investment Tracking – Country B (Illustrative)**

¶3 *Panel A – Flow measures (during Year T)*

Investment Category	Government – Flow [Year T]	Private – Flow [Year T]	Total Flow [Year T]	Share of national GFCF (%)
Fishing and aquaculture GFCF	8	45	53	0.3
Maritime transport GFCF	15	180	195	1.0
Offshore energy GFCF	0	320	320	1.7
Port infrastructure GFCF	85	40	125	0.7
Coastal tourism GFCF	12	95	107	0.6
Shipbuilding GFCF	0	35	35	0.2
Other ocean industries GFCF	5	20	25	0.1
Total ocean economy GFCF	125	735	860	4.5
Marine environmental protection (current + capital)	65	15	80	–
Blue bond issuance (flow)	200	0	200	–

¶4 *Panel B – Stock measures (at end of Year T)*

Sustainable finance instrument	Government – Stock [end-Year T]	Private – Stock [end-Year T]	Total Stock [end- Year T]
Blue loans outstanding	0	150	150
Blue bonds outstanding (use of proceeds)	200	0	200

¶5 The data in Table 3 reveal several structural patterns. Ocean economy GFCF (Panel A) totals USD 860 million, representing 4.5 per cent of national GFCF, with private investment (USD 735 million) substantially exceeding government investment (USD 125 million). Offshore energy dominates private ocean investment at 43 per cent of private ocean GFCF. Offshore oil, gas, or wind operations are capital-intensive. Government ocean investment is concentrated in port infrastructure (68 per cent of government ocean GFCF), consistent with the public good characteristics of maritime transport infrastructure. Marine environmental protection expenditure (USD 80 million) is additional to GFCF and reflects ongoing operational and capital costs for marine conservation. The sovereign blue bond issuance of USD 200 million exceeds total government ocean GFCF. That gap suggests blue bond proceeds are being directed towards a mix of capital investment and operational marine conservation programmes.

¶6 Compilers should reproduce the Table 3 structure with their own data, leaving the “Source” and “Notes” columns to document local data decisions.

Data sources

¶1 Ocean investment data can be derived from several sources:

¶2 National accounts and business statistics:

- ¶3 Annual national accounts GFCF by industry
- ¶4 Business register data on enterprise characteristics
- ¶5 Capital expenditure surveys
- ¶6 Investment intentions surveys

¶7 Government finance statistics:

- ¶8 Government final consumption expenditure and GFCF by COFOG function
- ¶9 Budget documentation and appropriations data
- ¶10 Environmental expenditure surveys (following EPEA methodology)

¶11 Financial sector data:

- ¶12 Central bank data on loans by sector
- ¶13 Securities regulator data on bond issuance
- ¶14 Stock exchange data on listed companies by sector

¶15 Administrative and specialised sources:

- ¶16 Ship registration data (vessel values, new registrations)
- ¶17 Maritime authority permits and licences
- ¶18 Aquaculture facility registrations
- ¶19 Port authority investment records
- ¶20 Marine protected area management budgets

¶21 For guidance on survey methods and administrative data integration, see **TG-4.2 Survey Methods** and **TG-4.3 Administrative Data**.

Classification and attribution

¶1 Compilers should:

1. ¶2 **Document industry classification** – specify which ISIC codes are treated as “ocean industries” and how ocean-related shares are estimated for mixed industries
 2. ¶3 **Apply consistent boundaries** – maintain the same definitional boundaries for the ocean economy over time, documenting any changes
- ¶4 For reconciliation to national totals and capitalisation thresholds, see Step 7 above.

Quality assessment

¶1 Investment data quality should be assessed against dimensions of data quality established in statistical frameworks²¹:

- ¶2 **Relevance** – do the investment indicators address user needs for understanding ocean economy development?
- ¶3 **Accuracy** – are estimates based on well-documented source data with manageable margins of error?
- ¶4 **Timeliness** – is the data available quickly enough to inform policy decisions?
- ¶5 **Coherence** – are ocean investment estimates coherent with broader national accounts and with other Ocean Accounts components?
- ¶6 **Comparability** – can the data be compared across countries and over time?

Reporting framework

¶1 A recommended reporting structure includes:

1. ¶2 **Summary table** – headline investment indicators for the most recent period and previous periods
2. ¶3 **Investment by institutional sector** – government versus private sector investment
3. ¶4 **Investment by ocean industry** – disaggregated by fishing, aquaculture, shipping, offshore energy, etc.
4. ¶5 **Investment by asset type** – structures, vessels, equipment, intellectual property
5. ¶6 **Sustainable finance** – blue bonds, blue loans, and other purpose-classified instruments
6. ¶7 **Methodological notes** – documentation of sources, classifications, and estimation methods

4. Acknowledgements

¶1 **Authors:** [To be confirmed]

¶2 **Reviewers:** [To be confirmed]

5. References and Further Reading

¶1 For additional guidance on the topics covered in this Circular, see:

- ¶2 **TG-0.2 Standards Overview** – for the international statistical standards underpinning the investment measurement framework
- ¶3 **TG-1.1 Budget Processes** – for guidance on government fiscal classifications and COFOG concordances
- ¶4 **TG-1.7 OA and Multilateral Development Finance** – for guidance on using Ocean Accounts in development finance contexts
- ¶5 **TG-1.8 OA and Project-Level Finance** – for guidance on blue bonds, debt-for-nature swaps, and other sustainable finance instruments
- ¶6 **TG-3.3 Economic Activity Relevant to the Ocean** – for the ocean economy thematic and extended accounting framework underpinning investment measurement

- ¶7 **TG-6.6 Deep-Sea and ABNJ** – for guidance on accounting for activities in areas beyond national jurisdiction

FOOTNOTES

1. ¶1 System of National Accounts 2025 (SNA 2025), Chapter 11 on the capital account.
2. ¶2 SNA 2025, Chapter 27 on Economic ownership and Chapter 35 on Measuring the sustainability of well-being, including discussion of natural resources and areas beyond national jurisdiction. For the corresponding external sector treatment of vessels and flags-of-convenience, see BPM7 Chapter 4 (Institutional Units and Sectors, Economic Territory, and Residence), paragraphs 4.214–4.220.
3. ¶3 SNA 2025, paragraph 35.129.
4. ¶4 United Nations (2023). *Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction* (BBNJ Agreement). Entered into force 17 January 2026.
5. ¶5 Classification of the Functions of Government (COFOG), UN Statistics Division. See also SNA 2025 discussion of government expenditure classification. The international COFOG standard halts at 4-digit class level; any further sub-class disaggregation of maritime transport within COFOG 04.5 is a national or regional statistical extension (for example, Eurostat national compilation manuals).
6. ¶6 Statistical Framework for Measuring the Sustainability of Tourism (SF-MST), paragraph 3.91.
7. ¶7 SEEA CF, paragraphs 4.62–4.68 on expenditure for environmental protection purposes.
8. ¶8 SEEA CF, paragraphs 4.85–4.88 on the definition of total national expenditure on environmental protection and the primary-purpose classification principle (consistent with CEPA 2000).
9. ¶9 SNA 2025, Chapter 11 on the capital account, particularly sections on asset classification and GFCF by asset type. Valuation guidance for produced assets on the balance sheet is set out in SNA 2025 Chapters 14 and 18.
0. ¶10 Ranges drawn from cross-country observations in the FAOSTAT Capital Stock domain (aquaculture sub-sector) and World Bank agricultural investment appraisal reports covering aquaculture project structures, machinery, buildings, and biological-asset components.
1. ¶11 SEEA CF, paragraphs 4.72–4.73 on end-of-pipe and integrated investments.
2. ¶12 SEEA CF, paragraph 4.73.
3. ¶13 SNA 2025, paragraph 35.122, adapted for ocean focus.
4. ¶14 SNA 2025, Table 35.3 showing the reporting structure for ESG and green financial instruments as “of which” items within financial instrument categories.
5. ¶15 SNA 2025, paragraph 35.125 on approaches to determining sustainable finance classification.
6. ¶16 European Commission (2020). *EU Taxonomy Regulation* (Regulation (EU) 2020/852), Article 9 and related delegated acts on technical screening criteria for the sustainable use and protection of water and marine resources. See also International Capital Market Association (ICMA) (2023), *Sustainability-Linked Bond Principles*, and IFC/ICMA *Bonds to Finance the Sustainable Blue Economy: A Practitioner’s Guide*.
7. ¶17 SNA 2025, paragraph 35.127 noting that “BPM7 also encourages countries to compile measures of ESG and green finance, for the international investment position (IIP) (stocks) and balance of payments (BOP) (flows).”
8. ¶18 SNA 2025, paragraph 35.126.
9. ¶19 Taskforce on Nature-related Financial Disclosures (TNFD) Recommendations (2023), Table 9 Additional global metrics for nature-related risks and opportunities, metric A16.O.
0. ¶20 TNFD Recommendations (2023), Table 7, metric C7.3: “Amount of capital expenditure, financing or investment deployed towards nature-related opportunities.”
1. ¶21 UN Fundamental Principles of Official Statistics and related quality frameworks such as the European Statistics Code of Practice. IMF (2014), *Balance Sheet Approach Manual*, is the source for the convention of presenting stock and flow measures in clearly demarcated panels.