

Economic Activity Relevant to the Ocean

Defines and measures the ocean economy using thematic and extended accounting principles, identifying ocean-related industries by standard industrial classification.

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OUTCOME

After completing this Circular, readers will be able to define and measure the ocean economy using thematic and extended accounting principles, identify ocean-related industries using the International Standard Industrial Classification (ISIC), compile supply and use tables for ocean economy sectors, and measure key aggregates including gross value added (GVA), employment, and the contribution of ocean activities to Gross Domestic Product (GDP). The guidance enables compilation of accounts that are consistent with the System of National Accounts 2025 (SNA 2025) and that integrate with the broader Ocean Accounts framework described in [TG-0.1 General Introduction to Ocean Accounts](#) and the statistical standards outlined in [TG-0.2 Overview of Relevant Statistical Standards](#). This Circular supports the derivation of indicators for macro-level economic dependencies on the ocean ([TG-2.2 Macro-level Dependencies](#)), ocean economy structure ([TG-2.5 Ocean Economy Structure](#)), investment analysis ([TG-2.6 Ocean Investment](#)), and resource efficiency ([TG-2.11 Resource Efficiency](#)).

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ABOUT THIS CIRCULAR

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1. Outcome

¶1 After completing this Circular, readers will be able to define and measure the ocean economy using thematic and extended accounting principles, identify ocean-related industries using the International Standard Industrial Classification (ISIC), compile supply and use tables for ocean economy sectors, and measure key aggregates including gross value added (GVA), employment, and the contribution of ocean activities to Gross Domestic Product (GDP). The guidance enables compilation of accounts that are consistent with the System of National Accounts 2025 (SNA 2025) and that integrate with the broader Ocean Accounts framework described in **TG-0.1 General Introduction to Ocean Accounts** and the statistical standards outlined in **TG-0.2 Overview of Relevant Statistical Standards**. This Circular supports the derivation of indicators for macro-level economic dependencies on the ocean (**TG-2.2 Macro-level Dependencies**), ocean economy structure (**TG-2.5 Ocean Economy Structure**), investment analysis (**TG-2.6 Ocean Investment**), and resource efficiency (**TG-2.11 Resource Efficiency**).

2. Requirements

¶1 Essential prerequisites:

- ¶2 **TG-0.1 General Introduction to Ocean Accounts**: conceptual framework and key components of Ocean Accounts
- ¶3 **TG-0.2 Overview of Relevant Statistical Standards**: international statistical standards underpinning ocean accounting

¶4 ① Framework Position

¶5 This Circular addresses the economic flows within the SNA production boundary (FG1). Ocean economy accounts measure production, income, supply/use, and capital flows that interact with SNA assets (E3). Economic activity also contributes to social conditions through employment and livelihoods (E5), whilst governance and institutional frameworks enable economic flows (E7). In the Ocean Accounts Framework (TG-0.1 Figure 0.1.2):

Edge	Direction	Description
E3	FG1 ↔ SG1	Monetary and physical flows between economic sectors and SNA assets (Applied)
E5	FG1 → SG2	Economic activities contributing to social conditions (Emerging)
Scope. TG-3.3 owns the ocean economy supply and use table and the aggregates derived from it – output, intermediate consumption, GVA, exports, GFCF – together with the ISIC and CPC concordance that delimits the ocean economy. It cross-refers for the indicators built on those aggregates to TG-2.5 , for the sector-operational detail of individual ocean industries to Section 6, and for the survey and administrative sources that populate the table to TG-4.2 and TG-4.3 .		

¶6 | E7 | SG2 → FG1 | Social assets enabling economic flows (Emerging) |

3. Guidance Material

3.1 Why ocean economy accounts are compiled

¶1 Three families of decision drive demand for these accounts, and they shape compilation priorities. **Budget justification** requires the ocean economy's contribution to national income and employment, to weigh public expenditure on ocean management, fisheries governance, port infrastructure and marine environmental protection. **Economic planning** requires the relative importance of ocean industries, their productivity and capital intensity, and the trend in each. **Investment analysis and sustainable finance** require capital formation by ocean industry and its relationship to output growth.

¶2 Which account and which indicator answer each of these, and what an ocean economy figure can and cannot be used to claim, are set out in **TG-1.0 Ocean Accounting and the Blue/Ocean Economy**, whose Section 3.4 carries the routing table. This Circular supplies the account those decisions read: the boundary, the concordance, the supply and use table and the aggregates derived from it.

¶3 Terminology follows TG-1.0 Section 3.2. This Circular measures the **ocean economy**; the accounting framework below can accommodate a different definitional choice, provided the scope and boundaries adopted are documented.

3.2 Defining the Ocean Economy

¶1 The **ocean economy** (also referred to as the 'marine economy' or 'blue economy') comprises the economic activities that derive outputs from the ocean, use the ocean as an input to production, or provide goods and services directly to ocean-related activities¹. This definition encompasses a spectrum from activities entirely dependent on the ocean (such as marine fishing) to activities that are partially ocean-related (such as coastal tourism, where visitors may engage in both marine and non-marine activities).

Conceptual boundaries

¶1 Defining the ocean economy requires clear boundaries around which activities are included. Following the ocean accounts framework in SEEA EA, the ocean economy can be understood in terms of three relationships between economic activities and the ocean²:

1. ¶2

Ocean-dependent activities – activities that directly extract resources from, operate on, or harvest products from the ocean. These include marine fishing, aquaculture, offshore oil and gas extraction, sea and coastal water transport, and off-shore renewable energy generation. These activities are intrinsically linked to the ocean and would not exist in its absence.

2. ¶3

Ocean-related activities – activities that provide goods and services to ocean-dependent activities, or that process products originating from the ocean. These include shipbuilding and repair, fish processing, port and harbour operations, marine scientific research, and maritime education. The ocean is essential to these activities, though they do not operate directly on or in the ocean.

3. ¶4

Partially ocean-related activities – activities where the ocean is one among several inputs or outputs. Coastal tourism is the primary example: visitors may stay in coastal accommodation and engage in marine recreation, but they also consume goods and services unrelated to the ocean. For these activities, the ocean economy accounts should estimate the share attributable to the ocean.

¶5 This three-tier categorisation aligns with approaches used by the OECD and various national ocean economy measurement programmes but is not a formally standardised classification. Countries may adapt these boundaries based on national circumstances and policy priorities, and should document the choices made to ensure transparency and comparability.

Operational decision rule for partially ocean-related activities

¶1 An activity is assigned to the ‘partially ocean-related’ tier when ocean-attributable revenue is a material share of establishment output. As an indicative materiality benchmark, this guidance suggests a figure of around 5 per cent of establishment output: activities whose ocean-attributable revenue falls well below this level are generally excluded from the ocean economy accounts rather than assigned a near-zero ratio. The 5 per cent figure is a pragmatic operational choice adopted by this guidance, not a value drawn from an external standard. SF-MST (paras 2.31–2.35) applies a qualitative ‘significant share’ criterion to identify tourism characteristic activities but does not specify a numeric threshold³. The 5 per cent benchmark operationalises that significance principle for the ocean economy context. SNA 2025 Chapter 38 para 38.8 notes that thematic accounts should focus on activities with material contributions to the phenomenon being measured. The benchmark is indicative rather than a rigid cut-off: compilers should apply judgement for activities close to the boundary and document the basis for inclusion or exclusion.

¶2 The following decision flowchart guides the classification of a candidate activity:

1. ¶3 Does the activity directly extract resources from, operate on, or harvest products from the ocean? **Yes** → Ocean-dependent (Tier 1, ratio = 1.0). **No** → proceed to step 2.
2. ¶4 Does the activity provide goods or services predominantly to ocean-dependent activities, or process ocean-origin products? **Yes** → Ocean-related (thematic scope, ratio estimated directly). **No** → proceed to step 3.
3. ¶5 Is ocean-attributable revenue a material share of establishment output (indicatively, around 5 per cent or more)? **Yes** → Partially ocean-related (Tier 1, ratio to be estimated). **No** → Exclude from ocean economy accounts.

¶6 Compilers should document the data source and methodology used to apply the materiality benchmark for each partially ocean-related industry included in their compilation, including any judgement exercised for activities close to the boundary. Figure 3.3.1 presents this three-gate routing as a decision tree. The Q3 materiality gate is the step most commonly misapplied.

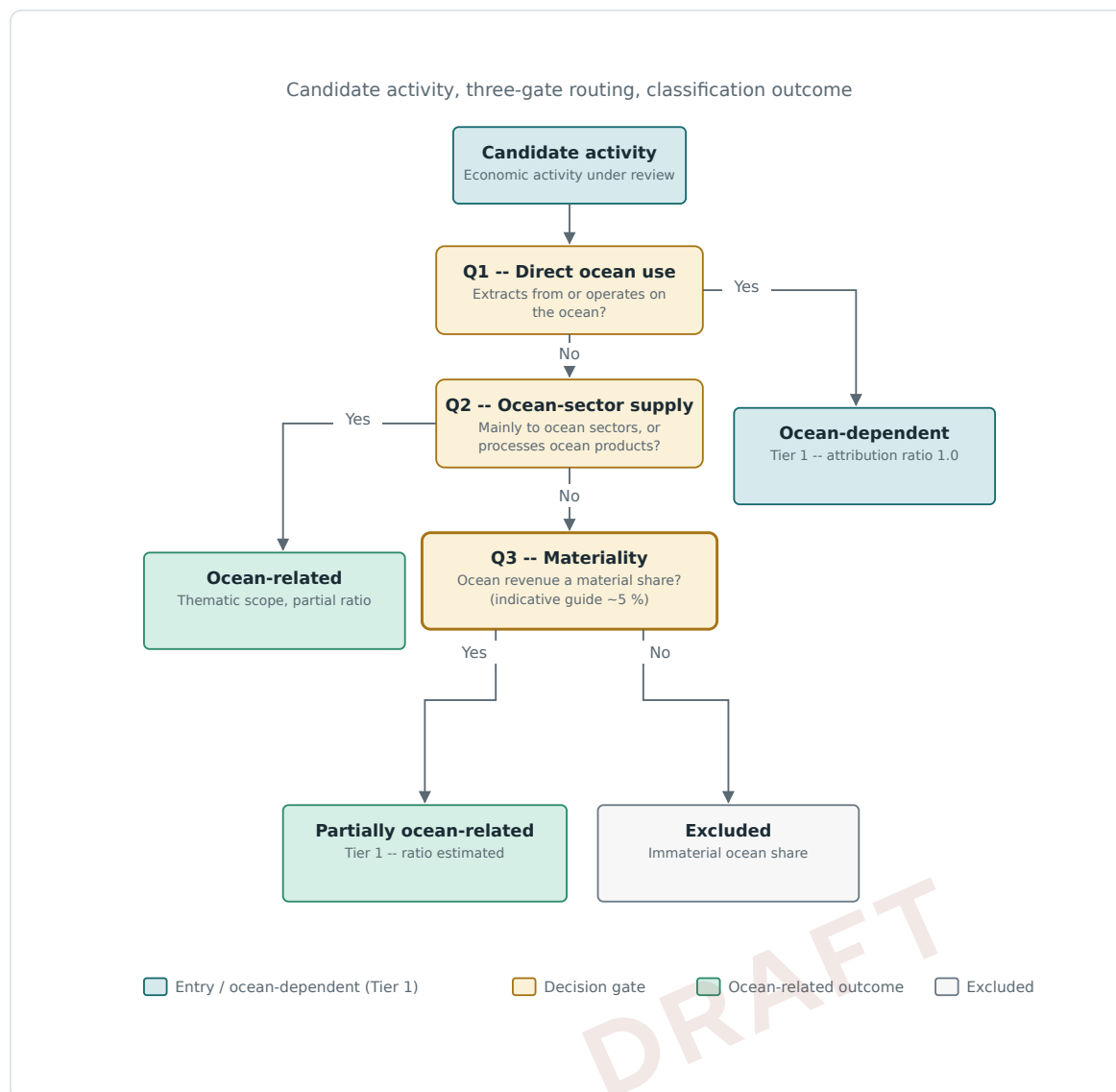


Figure 3.3.1 Three sequential gates route a candidate activity to ocean-dependent, ocean-related, partially ocean-related, or excluded. Q3 materiality uses an indicative 5% benchmark, not a hard cut-off; that gate is the most commonly misapplied.

Source: TG-3.3, operational decision rule for partially ocean-related activities (three-gate routing) and the indicative 5% materiality benchmark.

Scope of the ocean economy

¶1 There is no single agreed definition of the ocean economy. Different institutions approach its scope differently, as analytical purposes and national circumstances vary. Conceptual frameworks for delineating the ocean economy typically include some or all of the following categories⁴:

1. ¶2 Economic activity physically located on the ocean (e.g., shipping, marine fishing, offshore energy extraction)
2. ¶3 Economic activity physically proximate to the ocean (e.g., coastal tourism, coastal aquaculture, port operations)
3. ¶4 Economic sectors on land that depend on natural inputs from the ocean (e.g., fish processing, construction materials derived from marine aggregates)
4. ¶5 Economic activity providing goods or services to ocean-based sectors (e.g., shipbuilding, marine engineering, maritime insurance)
5. ¶6 Market value of natural inputs derivable from SEEA CF monetary flow accounts, and market and non-market ecosystem service values derivable from SEEA EA supply accounts
6. ¶7 Indirect and intermediate expenditures on goods and services used by direct ocean activities (backward linkages through supply chains)
7. ¶8 Induced and final demand expenditures enabled by direct and indirect ocean activities (household spending from ocean economy wages and profits)

¶9 This seven-part framework synthesises approaches from multiple sources, including the OECD (2016), various national ocean economy programmes, and the broader environmental-economic accounting literature. It should be understood as a complementary applied categorisation, not a classification prescribed by the SEEA or SNA. Categories 1–4 define the core scope used by most national ocean economy programmes. Categories 5–7 extend the measurement boundary for advanced analytical applications.

¶10 The first four categories correspond broadly to the direct economic activities that form the core of most national ocean economy measurement programmes. Categories five through seven extend the measurement boundary: category five captures ecosystem contributions, category six supply chain linkages, and category seven macroeconomic multiplier effects. The specific categories included in any particular compilation depend on data availability, analytical objectives, and the accounting frameworks employed. Figure 3.3.2 sets out how the seven categories map onto the Tier 1/ Tier 2 boundary. The double-rule marks the prohibition on summing the SNA-comparable core (categories 1–4) with the extension (categories 5–7). The relationship between ecosystem service values (category five) and economic activity is addressed further in **TG-2.4 Ecosystem Goods and Services** and **TG-3.2 Flows from the Environment to the Economy**.

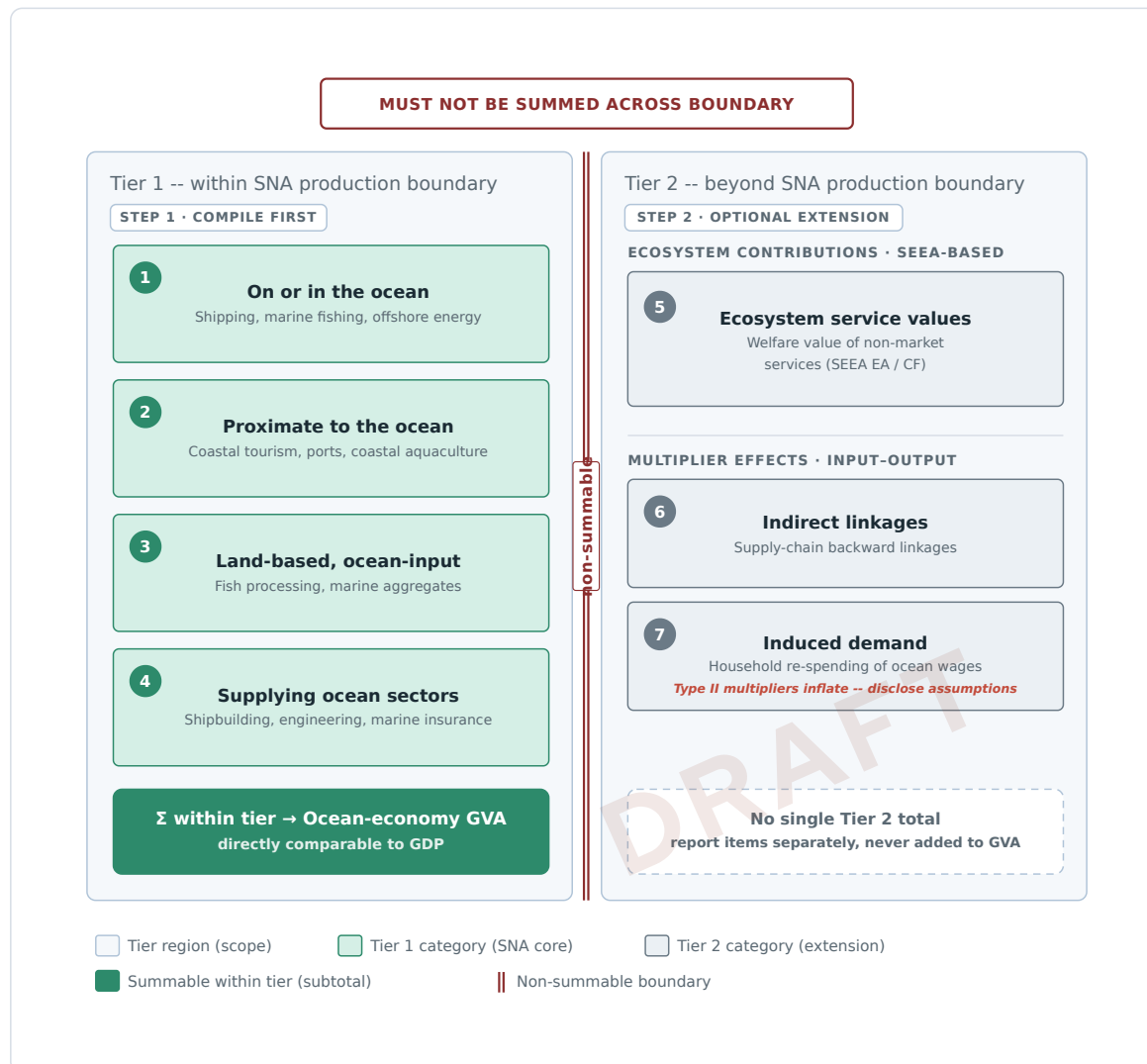


Figure 3.3.2 The Tier 1/ Tier 2 split is the SNA production boundary: Tier 1 and Tier 2 must never be summed together. Tier 1 sums within-tier to GDP-comparable ocean-economy GVA; Tier 2 items are optional extensions reported separately.

Source: TG-3.3 §“Scope of the ocean economy” (seven-category framework and tiered implementation note); multiplier caveat per TG-3.3 Section 6.

¶11 The 2025 SNA supports the compilation of **thematic and extended accounts** (formerly known as satellite accounts) for the ocean economy. Chapter 38 of the SNA 2025 describes thematic and extended accounts as “flexible tools for increasing the visibility of key phenomena by bringing all the pertinent data together in one place” (para 38.2)⁵. The SNA distinguishes the two (para 38.6): thematic accounts disaggregate and rearrange items within the integrated framework of the SNA, whilst extended accounts expand or modify the boundaries applied in that framework to give a fuller view of a phenomenon. Ocean economy measurement typically involves both: thematic accounts that provide detailed breakdowns of ocean-related industries within the existing national accounts framework, and extended accounts that incorporate ecosystem service values or other elements beyond the standard SNA production boundary. The SNA 2025 explicitly identifies oceans as an area where the core ecosystem accounting framework can be applied using thematic and extended accounting principles (para 35.63), and SEEA Ecosystem Accounting describes thematic accounting for oceans as a specific application (para A1.135)⁶.

Spatial considerations

¶1 The spatial dimension of the ocean economy intersects with the concept of Economic Exclusive Zones (EEZs) established under the United Nations Convention on the Law of the Sea (UNCLOS)⁷. A country's ocean economy includes:

- ¶2 Activities occurring within its territorial waters and EEZ

- ¶3 Activities by resident enterprises operating in international waters (such as distant-water fishing fleets), recorded as production of resident units
- ¶4 Coastal and land-based activities that serve ocean-related purposes (such as ports and fish processing plants)

¶5 Activities by non-resident units operating within a country's EEZ under licence or quota arrangements require careful treatment. The SNA 2025 addresses this specifically: when non-resident units make use of quota established for fishing in a country's EEZ, the coastal state is treated as owning the fish stocks, with the licence fees representing rent payments from the non-resident fishing enterprise to the coastal state⁸.

¶6 For areas beyond national jurisdiction (ABNJ), the entry into force of the BBNJ Agreement on 17 January 2026 may provide new frameworks for statistical treatment as governance arrangements develop⁹. Compilers should monitor developments in this area. Data considerations for ABNJ are addressed in **TG-6.6 Deep-Sea and ABNJ**.

The inland boundary

¶7 The geographic definition of the ocean economy requires an inland boundary as well as a seaward one, and the inland boundary is the country-specific decision of the two. It involves choices about the distance from the shoreline at which activity ceases to be counted, the extent of the coastal zone definition applied, the inclusion of rivers, estuaries and deltas where ocean-dependent activity occurs, and whether large inland bodies of water are included. The United States Marine Economy Satellite Account, which includes the Great Lakes, is the most-cited instance of the last of these. There are no universally correct answers to these choices, and the scope decisions of three national programmes in **TG-1.0** Section 3.6 show how legitimately they vary.

¶8 Two requirements follow. The boundary adopted should be documented explicitly and applied consistently across time periods, as an inland boundary that moves between periods makes a trend series uninterpretable. It should also be disclosed in the metadata accompanying any published aggregate: differences in inland boundary choice are a primary source of cross-country non-comparability, and a figure that does not state its inland boundary cannot be compared with another country's¹⁰.

Relationship to ecosystem services

¶1 The ocean economy as defined here is distinct from the ecosystem services supplied by marine ecosystems, though the two are related. Ecosystem services represent the contributions of ecosystems to economic activity and human well-being¹¹. The ocean economy, in contrast, represents the economic activities themselves. Fish harvested from the ocean represents an ecosystem service (biomass provisioning). The fishing industry that conducts the harvest is part of the ocean economy. The link between these concepts is addressed in **TG-2.4 Ecosystem Goods and Services** and **TG-3.2 Flows from the Environment to the Economy**.

3.3 Ocean Economy Thematic and Extended Accounts

¶1 The most statistically consistent approach to measuring the ocean economy applies **thematic and extended accounting** principles from the System of National Accounts. The SNA 2025 describes these as accounts that provide complementary data allowing insight into a key activity or aspect of the economy that lacks visibility in the integrated framework of national accounts (formerly known as 'satellite accounts')¹². The Tourism Satellite Account (TSA)¹³ provides a well-established model that has been adapted for ocean economy measurement in several countries.

¶2 Ocean economy measurement and tourism measurement are closely analogous. In both frameworks, economic activity is defined by its relationship to a particular domain (the ocean or tourism), which industry classification alone does not capture. Tourism measurement delineates a functional segment of the economy that cuts across multiple ISIC industries: tourists consume accommodation services, food services, transport services, and recreation services, none of which is exclusively a tourism industry. The ocean economy likewise encompasses marine fishing, offshore energy, maritime transport, shipbuilding, port operations, coastal tourism, and marine research, all distributed across multiple ISIC divisions. The concept of 'tourism characteristic products' and 'tourism characteristic activities' from the SF-MST (paras 2.33–2.35)¹⁴ translates directly to the ocean economy context as 'ocean-characteristic products' and 'ocean-characteristic activities'.

Principles of thematic and extended accounting

¶1 Thematic and extended accounts for the ocean economy follow four principles derived from the SNA¹⁵:

1. ¶2

Conceptual consistency – the thematic account uses the same concepts and definitions as the SNA (output, intermediate consumption, value added, employment), so that ocean economy measures are consistent with and comparable to broader economic statistics.

2. ¶3

Flexible boundaries – whilst maintaining conceptual consistency, the extended account can expand boundaries to include activities or products that merit special focus for analytical purposes, such as non-market ecosystem services or unpaid household production in coastal communities.

3. ¶4

Characteristic products and activities – following the TSA approach, ocean economy accounts identify 'ocean-characteristic products' (goods and services whose production depends on the ocean) and 'ocean-characteristic activities' (industries whose output consists predominantly of ocean-characteristic products).

4. ¶5

Supply and use framework – the thematic account organises data in a supply and use table framework that reconciles the supply of ocean-characteristic products with their use, enabling derivation of consistent estimates of ocean economy output, value added, and employment.

Structure of ocean economy thematic and extended accounts

¶1 An ocean economy thematic account typically comprises the following components¹⁶:

¶2 **Production accounts by ocean industry** – for each ocean-related industry, recording output, intermediate consumption, and gross value added. These accounts follow the structure of SNA production accounts but provide detail for ocean-specific industries that may be aggregated in standard national accounts.

¶3 **Supply table for ocean-characteristic products** – recording the supply of ocean-characteristic products by producing industry (ocean and non-ocean industries), imports, and adjustments for taxes less subsidies and trade margins.

¶4 **Use table for ocean-characteristic products** – recording the use of ocean-characteristic products as intermediate consumption by industry, final consumption by households and government, gross fixed capital formation, and exports.

¶5 **Employment accounts** – recording the number of persons employed, jobs, hours worked, and full-time equivalent employment in ocean industries, potentially disaggregated by occupation, status in employment, and demographic characteristics. See International Recommendations for Tourism Statistics 2008 Chapter 7 for methodological guidance on employment measurement in sector thematic accounts¹⁷.

¶6 **Gross fixed capital formation** – recording investment in ocean-related produced assets, including vessels, port infrastructure, aquaculture facilities, and offshore platforms.

¶7 **Connection to wider accounts** – documenting the relationship between ocean economy aggregates and national totals, including the ocean economy's share of GDP, employment, and exports.

¶8 The Classification of the Functions of Government (COFOG) identifies government expenditure on ocean-related functions, such as environmental protection of marine areas, fisheries management, and maritime safety. This expenditure data complements the production-focused thematic accounts described above. Linking COFOG-classified government expenditure with ocean economy production accounts supports analysis of public spending in relation to ocean economic activity. Detailed guidance on integrating government fiscal data with ocean accounts is provided in **TG-1.1 Budget Processes**.

Ocean economy indicators

¶1 The headline measures derived from these accounts – ocean economy GVA, employment, share of GDP, share of employment, exports and investment – together with their derivation and interpretation, are **TG-2.5 Structure and Function of the Ocean Economy**. This Circular produces the aggregates they are computed from; it does not restate them.

3.4 Industry Classifications

¶1 The identification and classification of ocean-related industries underpins the compilation of ocean economy accounts. The **International Standard Industrial Classification of All Economic Activities (ISIC)** provides the internationally agreed framework for classifying economic activities by industry¹⁸. ISIC Revision 4 remains the current international standard widely implemented in national statistics, although ISIC Revision 5 was endorsed by the UN Statistical Commission in March 2024 with implementation expected from 2027.

¶2 ISIC Rev.5 was endorsed by the UN Statistical Commission in March 2024, but full implementation in national statistical systems typically requires several years of preparatory work including development of national adaptations, correspondence tables, and back-casting of historical series. Compilers should ascertain which version of ISIC (or its national adaptation) is currently in use in their country's business register and economic surveys, and use the relevant correspondence tables when mapping between ISIC versions¹⁹.

Core ocean industries

¶1 The following ISIC Rev.4 categories represent the core ocean-dependent industries²⁰:

¶2 Division 03 – Fishing and Aquaculture

- ¶3 Class 0311 Marine fishing – fishing on a commercial basis in ocean and coastal waters, including taking of marine crustaceans, molluscs, and other marine organisms
- ¶4 Class 0312 Freshwater fishing – included when freshwater systems connect to marine environments or support anadromous species
- ¶5 Class 0321 Marine aquaculture – farming of marine fish, crustaceans, molluscs, seaweed, and other aquatic organisms in marine or brackish waters
- ¶6 Class 0322 Freshwater aquaculture – may be relevant for integrated coastal aquaculture systems

¶7 Division 50 – Water Transport

- ¶8 Group 501 Sea and coastal water transport
 - ¶9 Class 5011 Sea and coastal passenger water transport – including ferries, cruise ships, and excursion boats
 - ¶10 Class 5012 Sea and coastal freight water transport – including container shipping, tankers, and bulk carriers
- ¶11 Group 502 Inland water transport – relevant where inland waterways connect to marine transport systems

¶12 Division 06 – Extraction of Crude Petroleum and Natural Gas

- ¶13 Class 0610 Extraction of crude petroleum – includes offshore oil extraction
- ¶14 Class 0620 Extraction of natural gas – includes offshore gas extraction
- ¶15 Class 0910 Support activities for petroleum and natural gas extraction – includes offshore support services

¶16 Division 35 – Electricity, Gas, Steam and Air Conditioning Supply (partial)

- ¶17 Class 3510 Electric power generation, transmission and distribution – includes offshore wind, tidal, and wave energy generation (requires disaggregation from land-based generation)

¶18 Specific guidance on offshore energy accounting is provided in **TG-3.10 Offshore Energy**.

Ocean-related industries

¶1 Additional industries are partially ocean-related and require estimation of their ocean-related share²¹:

¶2 Manufacturing

- ¶3 Class 1020 Processing and preserving of fish, crustaceans and molluscs
- ¶4 Class 3011 Building of ships and floating structures
- ¶5 Class 3012 Building of pleasure and sporting boats
- ¶6 Class 3315 Repair of transport equipment (partial – for ship repair)

¶7 Transportation and storage

- ¶8 Class 5222 Service activities incidental to water transportation – including port and harbour operations, navigation, pilotage, and lighterage
- ¶9 Class 5224 Cargo handling (partial – for port cargo handling)
- ¶10 Class 5229 Other transportation support activities (partial – for marine support services)

¶11 Accommodation and food service activities

- ¶12 Class 5510 Short-term accommodation activities (partial – coastal tourism accommodation)
- ¶13 Class 5520 Camping grounds, recreational vehicle parks and trailer parks (partial – coastal facilities)

¶14 Professional, scientific and technical activities

- ¶15 Class 7110 Architectural and engineering activities (partial – marine engineering)
- ¶16 Class 7210 Research and experimental development on natural sciences and engineering (partial – marine research)

¶17 Public administration

- ¶18 Class 8423 Public order and safety activities (partial – coast guard, maritime enforcement)
- ¶19 Class 8421 Foreign affairs (partial – maritime boundary administration)

¶20 Education

- ¶21 Class 8530 Higher education (partial – maritime education and training)

¶22 Arts, entertainment and recreation

- ¶23 Class 9319 Other sports activities (partial – marine recreation including sport fishing)

¶24 **Emerging sectors and blue technology.** Innovative ocean technologies – including marine renewables, marine biotechnology, robotic marine vehicles, and advanced ICT applications in marine contexts – are often not yet codified in ISIC and may be small relative to core sectors in the early years of production. Best practice, consistent with EU and OECD approaches, is to report these sectors separately from core accounts at a level of detail appropriate to available information, rather than integrating them into existing ISIC classes where no code exists¹⁰.

Determining ocean-related shares

¶1 For industries that are only partially ocean-related, the ocean economy share – the **ocean ratio** – must be estimated. It is directly analogous to the ‘tourism ratio’ of the SF-MST (paras 4.50–4.53), which estimates the share of an industry’s output attributable to tourism demand²². **This subsection is the single source for ocean-ratio estimation across the publication;** TG-2.2, TG-2.5 and TG-2.11 apply the ratios derived here and do not restate the method.

¶2 **Choose the method by the data source available, in this order.** The ordering is by directness of evidence, not by convenience: each level down substitutes inference for observation, and the level used must be recorded per industry in the metadata²³.

Level	Data source	What it gives	Marine examples
1. Establishment survey	Establishment-level returns that separately identify ocean-related activity within a mixed industry	The ratio directly, at establishment level	A dedicated ocean-economy survey, or an ocean-relationship question added to the national business survey
2. Administrative or revenue records	Enterprise tax records, business registers, licensing and permit systems recording ocean-specific revenue or activity	An observed revenue or activity share	Coastal accommodation revenue from beach-facing properties; share of offshore drilling permits; cargo tonnage through marine ports; vessel registrations
3. Geospatial proxy	Establishment location intersected with a coastal or marine boundary	An inferred share from location	GIS coastal-proximity buffers applied to the business register; proportion of a commodity’s output sourced offshore
4. Structured expert judgement	A documented, iterative process with independent high and low estimates converging over anonymous rounds (Delphi)	A defensible starting point, with a commitment to refine	Any industry where levels 1–3 are unavailable

¶3 **Default allocation key where an enterprise straddles the boundary.** A single enterprise may span ocean and non-ocean activity under one ISIC code – a processor handling both marine and freshwater species, a coastal energy company with off-

shore and onshore operations. The recommended default key is **revenue share from ocean versus non-ocean sales** in the reference year: a processor deriving 70 per cent of revenue from marine species attributes 70 per cent of its GVA to the ocean economy. Whichever key is chosen must be documented and applied consistently across the entire time series; changing it between years introduces a structural break that must be flagged in the metadata.

¶4 **Indicative starting ranges, where nothing better exists.** These are pragmatic anchors for a first compilation at level 4, not standards-derived values, and they should be replaced as soon as level 1–3 data become available. Fish processing (ISIC 1020): **0.70–0.90**, reflecting typical industry structures in small island and coastal states. Coastal accommodation (ISIC 5510): **0.30–0.50**. Ratios outside these ranges require additional justification in the metadata.

¶5 **Identify the sources of partials before finalising industry selection.** The availability of reliable partial-estimation data should influence which industries are included in the accounts – not the reverse. Underlying data sources and allocation rules for all partials should be published alongside the results to support replication and cross-country comparison.

¶6 **Employment measure.** Where ocean employment is compiled, the primary measure is **headcount** (persons employed in the reference period), consistent with what labour force surveys typically support. Report **full-time equivalent (FTE)** employment additionally where source data permit, in line with the SNA 2025 recommendation that FTE is preferred for comparability where part-time and seasonal work is significant. FTE matters most for coastal accommodation, tourism-related and small-scale fisheries activity. The chosen measure must be applied consistently to both numerator and denominator of any employment share, and documented.

¶7 The approach for tourism follows the Tourism Satellite Account methodology, where the ‘tourism ratio’ concept is adapted to estimate the share of tourism industries attributable to coastal and marine tourism²⁴, ²⁵. Detailed guidance on survey methods is in **TG-4.2 Survey Methods for Ocean Economic Activity**, and on administrative data sources in **TG-4.3 Administrative Data Sources**. Multi-agency compilation has been demonstrated in practice: Canada’s marine economy accounts draw on Fisheries and Oceans Canada, Natural Resources Canada, Transport Canada and Statistics Canada.

3.5 Supply and Use Tables

¶1 **Supply and use tables (SUTs)** provide the integrating framework for ocean economy accounts. SUTs record the supply of products (from domestic production and imports) and their use (as intermediate consumption, final consumption, capital formation, or exports), so that total supply equals total use for each product²⁶. The SNA 2025 Chapter 15 sets out the structure, compilation, and balancing of supply and use tables in detail.

Structure of ocean economy SUTs

¶1 An ocean economy supply table records, for each ocean-characteristic product:

- ¶2 Output by ocean industries
- ¶3 Output by non-ocean industries (where applicable)
- ¶4 Imports of the product
- ¶5 Trade and transport margins
- ¶6 Taxes less subsidies on products
- ¶7 Total supply at purchasers’ prices

¶8 An ocean economy use table records, for each ocean-characteristic product:

- ¶9 Intermediate consumption by ocean industries
- ¶10 Intermediate consumption by non-ocean industries
- ¶11 Final consumption expenditure by households
- ¶12 Final consumption expenditure by government
- ¶13 Gross fixed capital formation
- ¶14 Changes in inventories
- ¶15 Exports
- ¶16 Total use at purchasers’ prices

Compilation procedure for ocean economy SUTs

¶1 The compilation process follows SNA 2025 Chapter 15 guidance and adapts the tourism measurement approach from the SF-MST²⁷. The following steps provide a systematic procedure:

¶2 Step 1: Identify ocean economy industries via ISIC concordance

¶3 Using the industry categorisation in Section 3.4 above and the ISIC–ocean economy concordance in Table 2 below, identify all ISIC Rev.4 classes that constitute the ocean economy in the compiling country. For each class, determine whether it is wholly ocean-dependent (ocean ratio = 1.0) or partially ocean-related (ocean ratio < 1.0). This classification corresponds to the identification of ‘tourism characteristic activities’ in the SF-MST framework²⁸.

¶4 Step 2: Identify ocean-characteristic products via CPC concordance

¶5 Determine which products are wholly or partially ocean-characteristic, using the Central Product Classification (CPC) aligned with ISIC industry classifications. Ocean-characteristic products include:

- ¶6 **Fish and fishery products** – Live fish and other fishing products (CPC Division 04); Processed and preserved fish products (CPC Group 212)

- ¶7 **Marine transport services** – Sea and coastal water transport services (CPC Divisions 65–67); Port services, pilotage, and lighterage
- ¶8 **Offshore extraction products** – Crude petroleum from offshore sources; Natural gas from offshore sources; Offshore mineral products
- ¶9 **Marine tourism and recreation services** – Coastal accommodation services (partial); Marine recreational services

¶10 **Step 3: Extract ocean economy sub-matrices from national SUTs**

¶11 From the balanced national supply and use tables, extract the columns corresponding to identified ocean economy industries and the rows corresponding to ocean-characteristic products. This creates ocean economy supply and use tables that are subsets of the national tables (SNA 2025 Chapter 15, para 15.9). If the national SUTs are published at a level of aggregation above individual ISIC classes, compilers may need to use supplementary data sources—business surveys (**TG-4.2**) and administrative records (**TG-4.3**)—to disaggregate the relevant columns and rows.

¶12 **Step 4: Determine ocean economy ratios**

¶13 For partially ocean-related industries, estimate the ocean ratio using the method hierarchy, the default allocation key and the indicative ranges in Section 3.4 above. Record the level used for each industry in the metadata.

¶14 **Step 5: Balance the ocean economy SUT**

¶15 Reconcile supply and use for each ocean-characteristic product, resolving discrepancies through quality assessment and adjustment. The balancing process improves the consistency and reliability of the accounts. SNA 2025 Chapter 15 (paras 15.130–15.139) provides detailed guidance on balancing procedures, including use of commodity flow methods, confrontation of supply and demand estimates, and iterative adjustment.

¶16 **Step 6: Derive GVA, employment, trade aggregates**

¶17 From balanced ocean economy SUTs, derive gross value added by industry (output less intermediate consumption), total ocean economy GVA, ocean economy employment, ocean economy exports, and ocean economy GFCF:

¶18

$$\text{Ocean Economy Direct GVA} = \sum_i (\text{GVA}_i \times \text{Ocean ratio}_i)$$

¶19 Summing GVA rather than output avoids double-counting inter-industry transactions by construction: the supply-use identity has already netted each industry's intermediate purchases out of its value added, so marine fishing (ISIC 0311) and fish processing (ISIC 1020) may both be included without double-counting the seafood supply chain.

¶20 **Step 7: Adjust for taxes less subsidies on products**

¶21 To derive Ocean Economy Direct GDP from Ocean Economy Direct GVA, add the ocean-related share of taxes less subsidies on products:

¶22

$$\text{Ocean Economy Direct GDP} = \text{Ocean Economy Direct GVA} + \text{Ocean share of (taxes – subsidies on products)}$$

¶23 The ocean share of product taxes and subsidies can be estimated in proportion to the ocean economy's share of total final expenditure on ocean-characteristic products.

¶24 These aggregates provide the foundation for the structural indicators in **TG-2.5 Ocean Economy Structure**, the dependency indicators in **TG-2.2 Macro-level Dependencies**, and the efficiency indicators in **TG-2.11 Resource Efficiency**.

Ocean economy supply-use table template

¶1 Table 1 provides a template for the ocean economy supply-use table in monetary terms. The supply table records the output of ocean-related products by ocean industries, whilst the use table records the intermediate consumption, final demand, and value added for each industry. This template follows the structure established in SNA 2025 Chapter 38 for thematic and extended accounts²⁹.

¶2 **Table 1: Ocean Economy Supply-Use Table Template (Basic Prices, currency units)**

¶3 **SUPPLY TABLE**

Product	Marine Fishing	Aquaculture	Shipping	Ports	Tourism	Other Ocean	Non-Ocean	Imports	Total Supply
Fish products									
Transport services									
Tourism services									
Port services									
Energy products									
Other products									
Total output									

¶4 USE TABLE

Product	Marine Fishing	Aquaculture	Shipping	Ports	Tourism	Other Ocean	Non-Ocean	Households	Govt	GFCF	E
Fish products											
Transport services											
Tourism services											
Port services											
Energy products											
Other products											
Total intermediate											
GVA											
Total output											

¶5 The supply-use identity requires that Total Supply = Total Use for each product. GVA for each industry provides the primary measure of the ocean economy's contribution to GDP.

ISIC-ocean economy concordance

¶1 Table 2 maps ISIC Rev.4 industry codes to ocean economy activities, identifying the relationship type and recommended estimation approach. This concordance supports the identification and measurement of ocean industries within existing national statistical frameworks³⁰.

ISIC Rev.4	Description	Ocean Relationship	Allocation key where partial	Preferred data source for the key
0311	Marine fishing	Ocean-dependent (100%)	n/a	Catch statistics
0312	Freshwater fishing	Excluded	n/a	n/a
0321	Marine aquaculture	Ocean-dependent (100%)	n/a	Aquaculture production statistics
0322	Freshwater aquaculture	Excluded	n/a	n/a
5011	Sea passenger transport	Ocean-dependent (100%)	n/a	Transport statistics
5012	Sea freight transport	Ocean-dependent (100%)	n/a	Transport statistics
0610	Crude petroleum extraction	Partial (offshore share)	Production volume share, offshore vs onshore	Petroleum regulator or enterprise records
0620	Natural gas extraction	Partial (offshore share)	Production volume share, offshore vs onshore	Petroleum regulator or enterprise records
3510	Electric power generation, transmission and distribution	Partial (offshore wind/tidal)	Generation capacity or output share	Energy regulator; generation licences
1020	Fish processing	Partial (may include freshwater species)	Revenue share, marine vs freshwater raw material	Enterprise survey or administrative records
3011	Ship building	Ocean-related	Direct, where the yard is marine-only	Business register
5222	Water transport support	Ocean-related	Direct	Port authority records
5510	Accommodation	Partial (coastal tourism)	Revenue share from marine tourism demand	Tourism surveys; coastal visitor statistics
9319	Sports activities	Partial (marine recreation)	Participation or revenue share	Tourism surveys

¶2 Table 2: ISIC Rev.4 to ocean economy concordance, with the allocation key and preferred data source for each partially ocean-related class. Illustrative: compilers should develop a country-specific concordance adapted to their national industry classification, and record the estimation level from Section 3.4 for each partial.

¶3 For 'ocean-dependent' industries (100% attributable), the full output of the ISIC class is included. For 'partial' industries, the ocean share must be estimated using supplementary data such as administrative records or surveys. For 'ocean-related' industries, professional judgement and data analysis determine inclusion.

3.6 Capital Formation in the Ocean Economy

¶1 Gross fixed capital formation (GFCF) in ocean industries, and expenditure on marine environmental protection, are compiled on the same industry basis as the ocean economy SUT above. This section specifies the classification decisions those compilations require. The **indicators** derived from them – public and private investment indicators, sustainable ocean finance, tracking methodology – are **TG-2.6 Ocean Investment**.

Scope tiers for an investment compilation

¶1 To support consistent application of the three-category framework, the basic/intermediate/extended tiered framing used elsewhere in this Circular applies:

- ¶2 **Basic (minimum required) scope.** A baseline ocean investment compilation must cover (i) ocean economy capital formation (GFCF by enterprises and government in ocean industries) and (ii) environmental expenditure for ocean protection. These two categories anchor the compilation in the SNA institutional sector accounts, specifically the capital account of non-financial corporations and general government (SNA 2025 Chapter 11) and the environmental protection expenditure account (EPEA) of the SEEA Central Framework.
- ¶3 **Intermediate scope.** Adds public-enterprise GFCF straddling the corporate and government sectors (e.g., state-owned port authorities, national fisheries enterprises), recorded against the appropriate SNA institutional sector. This is recommended where public enterprises are material to ocean investment.
- ¶4 **Extended scope.** Adds sustainable ocean finance as a supplementary classification of financial instruments (debt securities, loans, equity, investment fund shares) following the “of which” reporting structure in SNA 2025 Table 35.3. This tier is recommended for countries with active sustainable finance markets or sovereign blue bond programmes.

¶5 Adoption of a tier beyond basic should be documented in the methodological notes. Compilers using only the basic tier should not present the resulting table as exhaustive of ocean-related investment.

¶6 These scope tiers describe *what to measure*. They are distinct from, and orthogonal to, the data-maturity compilation pathway in **TG-2.6** Section 3.5 (Foundational, Developing, Advanced), which describes *what a compiler can produce given available data*. A country at an early data-maturity stage may still target extended scope. The two axes should not be conflated.

Restoration expenditure: capitalisation decision tree

¶1 The SNA treatment of restoration expenditure (mangrove planting, reef restoration, seagrass replanting) is recorded in **TG-2.6 Ocean-related Investment** Table 1 as “varies by nature of expenditure.” To support consistent classification, compilers should apply the following three-question decision tree before recording restoration expenditure as either GFCF or current expenditure:

1. ¶2 **Is the resource cultivated or natural?** Cultivated biological resources (e.g., a managed mangrove plantation intended to yield future services such as coastal protection, carbon storage, or fishery support) can give rise to produced assets. Wholly natural resources fall outside the SNA production boundary as produced assets. Restoration expenditure on them is recorded as current expenditure (or, in extended SEEA EA accounts, against the ecosystem asset).
2. ¶3 **Is there an identifiable asset whose value will accrue over multiple periods?** Capitalisation requires an asset that delivers benefits over more than one accounting period. Project-based plantings managed under a maintenance plan typically meet this test, whilst one-off cleanup events do not.
3. ¶4 **Who holds economic ownership of the restored resource?** Economic ownership means the right to claim benefits and bear risks, and that ownership must rest with an identifiable institutional unit for GFCF treatment to apply (SNA 2025 Chapter 11, the capital account, which defines the economic owner as the unit entitled to claim the benefits of using an asset by virtue of accepting the associated risks). Where the restored resource is on commons or in areas beyond clearly assigned ownership, current expenditure treatment applies.

¶5 For the non-produced asset dimension (treatment of the ecosystem itself), compilers should consult SNA 2025 Chapter 11 on biological resources and the SEEA Ecosystem Accounting (SEEA EA) Chapter 3 on ecosystem asset delineation, with monetary asset and restoration treatment elaborated in SEEA EA Chapters 10-12.

Residence and economic ownership for ocean assets

¶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:

- ¶2 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.
- ¶3 Offshore installations within a country’s Exclusive Economic Zone (EEZ) are treated as being within the economic territory of the coastal state.
- ¶4 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.

¶5 **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.

¶6 The treatment of maritime investments has been clarified in SNA 2025, which provides guidance on the economic ownership of ships and offshore structures³¹. 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”³². 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 zones³³.

¶7 **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. ¶8 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. ¶9 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.

Classification rule: avoiding double-count between GFCF and EPEA

¶1 Several categories of ocean-related public spending, in particular coastal protection structures (sea walls, groynes, beach nourishment), could plausibly be classified under both government GFCF in ocean industries and environmental protection expenditure for ocean protection. To prevent double counting, compilers should apply the following classification rule:

- ¶2 **GFCF is classified by the primary purpose of the asset**, following the COFOG purpose-of-expenditure logic. A sea wall whose primary purpose is coastal-zone protection of property and infrastructure is recorded under transport / coastal protection GFCF. A sea wall whose primary purpose is pollution abatement or habitat protection (e.g., constructed as part of an MPA management programme) is recorded under environmental protection.
- ¶3 **The same expenditure must not appear in both the GFCF total and the environmental protection expenditure total** in a single summary table, unless the current and capital components are explicitly separated and labelled. Where EPEA is reported alongside GFCF (as in TG-2.6 Table 3), the EPEA row should be understood as additional to GFCF, covering current expenditure plus any capital expenditure that has been classified under EPEA rather than under sectoral GFCF.
- ¶4 Cross-reference: SEEA Central Framework paragraphs 4.85–4.88 on the definition of total national expenditure on environmental protection, and the broader CEPA 2000 primary-purpose classification principle that underpins EPEA.

3.7 Worked Example: Ocean Economy SUT for Country A

¶1 To illustrate the compilation procedure, this section presents a worked example for a hypothetical medium-income coastal state ('Country A') with a total GDP of approximately USD 50 billion, total employment of 10 million persons, and an ocean economy representing 3.5 per cent of GDP. All monetary values are expressed in millions of USD. The example demonstrates how the ocean economy SUT template (Table 1) is populated with synthetic data consistent with the structural indicators presented in **TG-2.5 Ocean Economy Structure** Section 3.2 (Table 3.1).

Compilation context

¶1 Country A has:

- ¶2 A diversified ocean economy dominated by coastal tourism (32% of ocean GVA) and offshore oil and gas (24%)
- ¶3 Maritime transport and port operations contributing 18% of ocean GVA
- ¶4 A traditional marine living resources sector (fishing, aquaculture, fish processing) contributing 10%
- ¶5 Emerging marine renewable energy sector (offshore wind) contributing 4%
- ¶6 Shipbuilding and 'other ocean industries' (marine research, maritime education, coast guard) making up the remainder

¶7 The compilation follows the seven-step procedure in Section 3.5, extracting ocean industry columns from national SUTs and applying ocean economy ratios to partially ocean-related industries.

Simplified ocean economy supply table (Country A)

¶1 Table 3 presents a simplified supply table for eight ocean-characteristic product groups and seven ocean industry groups. The table records domestic production by industry (columns 2–8), imports (column 9), and total supply (column 10).

¶2 **Table 3: Ocean Economy Supply Table, Country A (million USD, basic prices)**

Product	Fishing/Aqua	Fish Processing	Shipping/Ports	Offshore Energy	Shipbuilding	Tourism	Other	Imports	Total Supply
Fish products	180	—	—	—	—	—	—	35	215
Processed fish	—	135	—	—	—	—	—	5	140
Transport services	—	—	565	—	—	—	—	55	620
Port services	—	—	65	—	—	—	—	—	65
Energy products	—	—	—	840	—	—	—	93	933
Ships/vessels	—	—	—	—	280	—	—	28	308
Tourism services	—	—	—	—	—	875	—	58	933
Other ocean products	15	10	—	—	28	58	174	60	345
Non-ocean products (memo)	—	—	—	—	—	—	—	—	1,000

Product	Fishing/Aqua	Fish Processing	Shipping/Ports	Offshore Energy	Shipbuilding	Tourism	Other	Imports	Total supply
Total output	195	145	630	840	308	933	174	334	3,559

¶3 The industry column totals show gross output for each ocean industry. The rightmost figure (3,559) is total supply of the eight ocean-characteristic product groups: domestic output of 3,225 plus imports of 334. It must equal total use of those same products in the balanced SUT.

¶4 Ocean industries also buy inputs that are not ocean-characteristic products – fuel bought ashore, insurance, professional services, construction materials. Those products are supplied by non-ocean industries and lie outside the extracted sub-matrix, so they are carried as a single memorandum row rather than being attributed to an ocean industry column. Recording them inside an ocean product row is a common compilation error: it inflates that product's use above its supply and breaks the balance for the row.

Simplified ocean economy use table (Country A)

¶1 Table 4 presents the use table showing intermediate consumption by industry (columns 2–8), final demand categories (columns 9–12), and total use (column 13). The bottom rows show total intermediate consumption, GVA, and total output (which must equal the output row from the Supply Table).

¶2 **Table 4: Ocean Economy Use Table, Country A (million USD, basic prices)**

Product	Fishing/Aqua	Fish Processing	Shipping/Ports	Offshore Energy	Shipbuilding	Tourism	Other	Households
Fish products	5	120	–	–	–	–	–	50
Processed fish	–	–	–	–	–	5	–	55
Transport services	5	5	50	20	10	30	5	50
Port services	–	–	3	2	5	–	–	5
Energy products	2	3	100	84	20	80	14	300
Ships/vessels	–	–	–	–	3	–	–	–
Tourism services	–	–	5	–	–	47	5	820
Other ocean products	8	7	40	30	25	50	15	25
Non-ocean products (memo)	–	–	117	284	122	161	48	40
Total intermed.	20	135	315	420	185	373	87	–
GVA	175	10	315	420	123	560	87	–
Total output	195	145	630	840	308	933	174	–
Total final demand								1,345

¶3 Note: The table is balanced. Every product row satisfies total supply (Table 3) = total use, every industry column satisfies output = intermediate consumption + GVA, and the industry Total Output row (USD 3,225M) equals the corresponding totals in Table 3. Total intermediate consumption is USD 1,535M and GVA is USD 1,690M (= 3,225 - 1,535). The non-ocean products row is the memorandum row introduced in Table 3: it carries the inputs ocean industries buy from outside the ocean economy, and it is excluded from every ocean economy aggregate below.

Key aggregates derived from the SUT

¶1 From Tables 3 and 4, the following ocean economy aggregates are derived. Table 3.6.1 below summarises the key aggregates.

Aggregate	Value	Derivation from Tables 3 and 4
Ocean economy output	USD 3,225M	Sum of the industry Total Output row, Table 3
Ocean economy intermediate consumption	USD 1,535M	Sum of the Total intermed. row, Table 4
Ocean economy GVA	USD 1,690M	3,225 - 1,535; equals the sum of the GVA row, Table 4
Ocean economy exports	USD 1,205M	Exports column, Table 4 (1,212) less the non-ocean memorandum row (7)
Ocean economy GFCF	USD 195M	GFCF column, Table 4 (380) less the non-ocean memorandum row (185)
Ocean economy imports	USD 334M	Sum of the Imports column, Table 3

¶2 Every figure above is derivable from the two tables and from nothing else. That is the property to preserve when a compiler substitutes national data: an aggregate that cannot be recomputed from the published tables cannot be audited.

¶3 **Reconciliation with TG-2.5. TG-2.5 Ocean Economy Structure** Tables 3.1 and 3.1a report the same illustrative Country A on a fuller compilation that includes minor ocean industries omitted from this simplified SUT. The two presentations must be reconciled before either is cited, not used interchangeably.

Aggregate	This SUT	TG-2.5	Difference	Status
Output	3,225	3,436	+211	Reconciled: minor ocean industries outside the seven industry groups shown here

Aggregate	This SUT	TG-2.5	Difference	Status
GVA	1,690	1,750	+60	Reconciled: same minor industries
Exports	1,205	620	-585	Not reconciled. The difference is larger than the industry coverage gap and runs in the opposite direction. Compilers should not cite either figure until the Secretariat resolves which product scope TG-2.5 Table 3.1a applies to exports.

¶4 Where the reconciliation holds, the aggregates feed the structural indicators in TG-2.5: ocean economy share of GDP ($1,750/50,000 = 3.5\%$) and ocean economy investment rate ($195/1,750 = 11.1\%$). The share-of-exports indicator is held back pending the reconciliation above.

Cross-stack linkages

¶1 The ocean economy SUT compiled in this example provides the 'data foundation' for multiple downstream applications across the Ocean Accounts Technical Guidance series:

- ¶2 **Upward to indicators:** The GVA, employment, and trade aggregates derived from the SUT populate the structural indicators in **TG-2.5** Tables 3.1, 3.1a, 3.1b, and 3.3.
- ¶3 **Upward to budget processes:** The four-row budget presentation format in **TG-1.1** Section 3.3 draws GDP contribution, employment, and export values directly from the SUT aggregates.
- ¶4 **Upward to investment analysis:** The GFCF column in the Use Table (Table 4) provides the industry-level investment data required for the investment indicators in **TG-2.6**.
- ¶5 **Downward to data sources:** The product and industry detail required to populate the SUT draws on survey data (**TG-4.2**) and administrative records (**TG-4.3**), harmonised through the procedures in **TG-4.6**.
- ¶6 **Lateral to flows accounting:** The production data by ocean industry (output and intermediate consumption) feed into the economy-to-environment flow accounts in **TG-3.4**, enabling estimation of marine pollution, resource extraction, and other pressures.
- ¶7 **Lateral to combined presentations:** The aggregates derived from the ocean economy SUT are integrated with ecosystem accounts in the combined presentation structures described in **TG-3.8**.

3.8 Treatment of Coastal Tourism

¶1 Coastal tourism presents particular challenges for supply and use table compilation because tourism is defined from the demand side (activities of visitors) rather than the supply side (industrial classification)³⁴. The Statistical Framework for Measuring the Sustainability of Tourism (SF-MST) provides guidance on integrating tourism statistics with economic and environmental accounts³⁵.

¶2 For ocean economy accounts, the recommended approach is set out in Table 3.7.1 below.

Step	Description
1. Identify coastal tourism destinations	Delineate coastal areas where tourism activity is concentrated.
2. Estimate coastal tourism expenditure	Using visitor surveys or tourism satellite account data, estimate tourism expenditure in coastal destinations.
3. Allocate expenditure to products	Classify tourism expenditure by product category (accommodation, food, transport, recreation).
4. Estimate ocean-related shares	Within coastal tourism expenditure, estimate the share directly attributable to marine activities (such as marine recreation, diving, fishing charters) versus general tourism services.
5. Integrate with SUTs	Incorporate coastal tourism product flows into the supply and use table framework, ensuring consistency with TSA methodology where available.

¶3 The SF-MST provides specific guidance on measuring tourism at sub-national levels, including destination-level measurement approaches that are directly applicable to coastal and marine tourism areas³⁶.

3.9 Integration with National SUTs

¶1 Ocean economy SUTs should be compiled as a disaggregation of national SUTs, ensuring that:

- ¶2 Ocean industry output and intermediate consumption aggregate to values consistent with national accounts
- ¶3 Ocean product supplies and uses aggregate to values consistent with national commodity flow accounts
- ¶4 Ocean economy GVA sums to a component of national GDP

¶5 This integration ensures that ocean economy statistics are consistent with and comparable to national economic statistics, and enables analysis of the ocean economy's share of national aggregates.

3.10 Extended Applications: Input-Output Analysis

¶1 Balanced supply and use tables provide the foundation for constructing symmetric **input-output tables (IOTs)** that enable extended analytical applications³⁷. Input-output analysis allows estimation of:

- ¶2 **Multiplier effects** – the total economic impact of ocean industries, including direct, indirect, and induced effects throughout the economy
- ¶3 **Backward and forward linkages** – the degree to which ocean industries are integrated with other sectors of the economy

- ¶4 **Embodied resource flows** – the natural inputs (including marine resources) embodied in production throughout supply chains

¶5 These extended analyses support policy assessment and are relevant to the derivation of economic dependency indicators described in **TG-2.2 Macro-level Dependencies**.

Implementation Considerations

¶1 For minimum institutional capacity, data infrastructure, and human skills requirements for compiling these accounts, see **TG-0.8 Implementation Readiness Assessment**. For guidance on adapting these methods to sub-national scales, see **TG-3.11 Sub-National Ocean Accounts**.

4. Acknowledgements

¶1 **Authors:** [To be confirmed]

¶2 **Reviewers:** [To be confirmed]

5. References

- ¶1 OECD (2016). *The Ocean Economy in 2030*. Paris: OECD Publishing. The OECD definition encompasses “ocean-based industries” and “natural assets and ecosystem services that the ocean provides.”
- ¶2 United Nations (2024). *SEEA Ecosystem Accounting*, para 13.88. The ocean economy is measured “in terms of the contribution of the main ocean-related activities...to the national economy.”
- ¶3 World Tourism Organization (2024). *SF-MST*, paras 2.31–2.35 set out a qualitative significance criterion for identifying tourism characteristic activities (“a significant share” of expenditure or supply) but do not specify a numeric threshold; SF-MST expressly treats the setting of such thresholds as outside the statistical task (para 2.5). The 5 per cent figure is therefore a pragmatic materiality threshold adopted by this guidance to operationalise that significance principle for the ocean economy context, not a value drawn from SF-MST.
- ¶4 This categorisation draws on OECD (2016). *The Ocean Economy in 2030*. Paris: OECD Publishing. Categories 5–7 extend the direct activity boundary to incorporate ecosystem values and macroeconomic linkages.
- ¶5 United Nations et al. (2025). *System of National Accounts 2025*, Chapter 38, para 38.2. See also para 38.6 on the distinction between thematic accounts (disaggregating within SNA boundaries) and extended accounts (expanding SNA boundaries).
- ¶6 United Nations et al. (2025). *System of National Accounts 2025*, para 35.63 on ocean accounting applications, and para A1.135 on SEEA Ecosystem Accounting thematic accounts for oceans.
- ¶7 United Nations (1982). *United Nations Convention on the Law of the Sea*. Part V on Exclusive Economic Zone establishes coastal state rights to resources within 200 nautical miles.
- ¶8 United Nations et al. (2025). *System of National Accounts 2025*, Annex 5, paras A5.30–A5.43 on Accounting for the economic activities of non-resident units making use of quota established for fishing in a country's Exclusive Economic Zone.
- ¶9 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.
- ¶10 Colgan, C.S. (2022). *A Guide to Creating Core Ocean GDP Accounts*. Global Ocean Accounts Partnership. Available at: <https://www.oceanaccounts.org/a-guide-to-creating-core-ocean-gdp-accounts/> (<https://www.oceanaccounts.org/a-guide-to-creating-core-ocean-gdp-accounts/>)
- ¶11 United Nations (2024). *SEEA Ecosystem Accounting*, para 2.24. Ecosystem services are “the contributions of ecosystems to the benefits that are used in economic and other human activity.”
- ¶12 United Nations et al. (2025). *System of National Accounts 2025*, Chapter 38, para 38.2. The SNA 2025 uses the term “thematic and extended accounts” in place of the former “satellite accounts” terminology used in earlier editions.
- ¶13 United Nations, UNWTO, Eurostat, and OECD (2010). *Tourism Satellite Account: Recommended Methodological Framework 2008*. The TSA provides the methodological template for sector-specific thematic accounts.
- ¶14 World Tourism Organization (2024). *SF-MST*, paras 2.33–2.35 on tourism characteristic products and tourism characteristic activities. The framework defines tourism characteristic products as “consumption products that satisfy one or both of the following criteria: (i) tourism expenditure on the product should represent a significant share of total tourism expenditure; (ii) tourism expenditure on the product should represent a significant share of the supply of the product in the economy” (para 2.33).
- ¶15 United Nations et al. (2025). *System of National Accounts 2025*, Chapter 38, paras 38.6–38.14 describe the principles of thematic and extended accounts.
- ¶16 This structure adapts the TSA framework (TSA:RMF 2008) to ocean economy measurement. See also NOEA (National Ocean Economics Program) methodology used in the United States.
- ¶17 UNWTO and UNSD (2008). *International Recommendations for Tourism Statistics 2008*. Chapter 7 provides detailed guidance on employment measurement in tourism industries, applicable by extension to ocean economy employment accounts.
- ¶18 United Nations (2008). *International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4*. Statistical Papers Series M No. 4/Rev.4. New York: United Nations.
- ¶19 United Nations (2024). *ISIC Rev.5 - Rev.4 Correspondence Tables*. UNSD Classifications Registry. Compilers should consult the latest correspondence tables available from the UN Statistics Division.
- ¶20 ISIC Rev.4 detailed structure and explanatory notes. Division 03 (Fishing and aquaculture) and Division 50 (Water transport) represent core ocean industries.
- ¶21 The identification of ocean-related industries follows approaches used in the EU Blue Economy Report (European Commission, annual) and US National Ocean Economics Program.
- ¶22 World Tourism Organization (2024). *SF-MST*, paras 4.50–4.53 on tourism ratios. The tourism ratio is “the total output of tourism characteristic products by an industry divided by its total output” (para 4.50).
- ¶23 Methods for estimating industry shares follow general SNA guidance on compiling thematic and extended accounts (SNA 2025 Chapter 38) and specific guidance in TSA:RMF 2008.
- ¶24 UNWTO (2010). *Tourism Satellite Account: Recommended Methodological Framework 2008*, paras 4.50–4.53 on tourism ratios.
- ¶25 World Tourism Organization (2024). *SF-MST*, para 3.28 on the tourism ratio.
- ¶26 United Nations et al. (2025). *System of National Accounts 2025*, Chapter 15 describes supply and use tables in detail. Para 15.9 introduces the basic structure: “Supply tables show how products are made available to the economy, from domestic industries and through imports. Use tables show how these products are consumed, as intermediate consumption by industries or as final consumption, capital formation or exports.”
- ¶27 World Tourism Organization (2024). *SF-MST*, Chapter 3 on Measuring the economic dimension, particularly Section 3.3 on Measuring the economic structure and performance of tourism industries.
- ¶28 World Tourism Organization (2024). *SF-MST*, para 2.31 on tourism characteristic activities.

9. ¶29 United Nations et al. (2025). *System of National Accounts 2025*, Chapter 38, paras 38.20–38.30 on the use of supply and use tables in thematic and extended accounts. The template adapts the general SUT framework to ocean economy measurement.
10. ¶30 Based on ISIC Rev.4 detailed structure (United Nations, 2008) and ocean economy industry identification approaches used in OECD (2016) and the EU Blue Economy Report (European Commission, annual).
1. ¶31 SNA 2025, Chapter 11 on the capital account (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 see BPM7 Chapter 4, paras 4.214–4.220.
2. ¶32 SNA 2025, paragraph 35.129.
3. ¶33 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.
4. ¶34 UNWTO and UNSD (2008). *International Recommendations for Tourism Statistics 2008*. Tourism is defined from the visitor (demand) perspective.
5. ¶35 UNWTO (2024). *Statistical Framework for Measuring the Sustainability of Tourism (SF-MST)*. Final Draft, February 2024. Chapters 2–3 address economic dimension measurement.
6. ¶36 UNWTO (2024). *SF-MST*, Section 2.5 on Measuring the sustainability of tourism at sub-national levels, and Section 3.7 on Measuring the economic dimension for sub-national spatial areas.
7. ¶37 Eurostat (2008). *Eurostat Manual of Supply, Use and Input-Output Tables*. Chapter 11 addresses transformation of SUTs to symmetric input-output tables.

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