

Transboundary Data Sharing and Integration

Enables ocean account compilers to establish data exchange agreements and technical pipelines for acquiring cross-border data on shared marine ecosystems.

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OUTCOME

This Circular enables ocean account compilers to establish data exchange agreements and technical pipelines for acquiring cross-border data on shared marine ecosystems, jointly managed fish stocks, and transboundary ecosystem services, and to integrate that data into national SEEA EA accounts. After completing this Circular, a practitioner will be able to: (1) identify the legal basis – including UNCLOS obligations and regional seas conventions – under which their country may share ocean accounting data with neighbouring states; (2) select appropriate metadata and exchange standards (ISO 19115, OGC, SDMX, Darwin Core) for a specific transboundary data flow; (3) design bilateral or regional institutional arrangements that complement the national coordination architectures in [TG-4.7 National Data Coordination Architectures](#); (4) document data received under transboundary agreements in a manner that meets the quality assurance requirements of [TG-0.7 Quality Assurance Principles](#); and (5) report the resulting integrated data to regional seas bodies, global frameworks (SDG 14, Kunming-Montreal Global Biodiversity Framework), and the GOAP central registry.

This Circular extends the national data coordination architecture in TG-4.7 to the international domain. Where TG-4.7 addresses coordination among domestic agencies, the present Circular addresses coordination between countries – including the distinct legal instruments, institutional actors, and technical standards that apply when data cross national boundaries.

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ABOUT THIS CIRCULAR

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DRAFT

¶1 ⓘ Framework Position

¶2 TG-4.12 sits within Section 4 (Data Methods). It owns the acquisition of data across a national boundary: the legal basis under UNCLOS and regional seas conventions, bilateral and regional institutional arrangements, the technical exchange standards a transboundary flow requires, and the documentation and attribution that must accompany data received from another state. It extends **TG-4.7 National Data Coordination Architectures** from the domestic to the international domain. It does not own the accounts that shared data enter; where a shared stock or ecosystem spans a boundary, the accounting treatment of the shared asset is **TG-3.1 Asset Accounts** and, for areas beyond national jurisdiction, **TG-6.6 Deep Sea and ABNJ Accounting**.

1. Outcome

¶1 This Circular enables ocean account compilers to establish data exchange agreements and technical pipelines for acquiring cross-border data on shared marine ecosystems, jointly managed fish stocks, and transboundary ecosystem services, and to integrate that data into national SEEA EA accounts. After completing this Circular, a practitioner will be able to: (1) identify the legal basis – including UNCLOS obligations and regional seas conventions – under which their country may share ocean accounting data with neighbouring states; (2) select appropriate metadata and exchange standards (ISO 19115, OGC, SDMX, Darwin Core) for a specific transboundary data flow; (3) design bilateral or regional institutional arrangements that complement the national coordination architectures in **TG-4.7 National Data Coordination Architectures**; (4) document data received under transboundary agreements in a manner that meets the quality assurance requirements of **TG-0.7 Quality Assurance Principles**; and (5) report the resulting integrated data to regional seas bodies, global frameworks (SDG 14, Kunming-Montreal Global Biodiversity Framework), and the GOAP central registry.

¶2 This Circular extends the national data coordination architecture in TG-4.7 to the international domain. Where TG-4.7 addresses coordination among domestic agencies, the present Circular addresses coordination between countries – including the distinct legal instruments, institutional actors, and technical standards that apply when data cross national boundaries.

2. Requirements

¶1 Essential prerequisites:

- ¶2 **TG-0.1 General Introduction to Ocean Accounts** – for the conceptual framework and core accounting components that transboundary data must feed into.
- ¶3 **TG-4.6 Data Harmonisation and Interoperability** – for the baseline data standards and interoperability protocols applied within and between countries, which TG-4.12 extends to cross-border contexts.
- ¶4 **TG-4.7 National Data Coordination Architectures** – for the domestic institutional arrangements upon which transboundary coordination builds. TG-4.12 is explicitly a cross-border extension of TG-4.7.

¶5 Helpful background:

- ¶6 **TG-0.7 Quality Assurance Principles** – for the quality dimensions that must be maintained when integrating externally sourced data into national accounts.
- ¶7 **TG-4.2 Survey Methods for Ocean Economic Activity** – for survey design in shared sea areas, including harmonising survey frames between neighbouring countries.

¶8 Data requirements:

- ¶9 Existence of a national ocean accounts focal point or coordinating body with authority to engage in bilateral data exchange discussions.

- ¶10 Access to existing bilateral or multilateral frameworks (treaty, convention, MoU) under which a data exchange channel can be formalised or activated.

¶11 Legal and institutional requirements:

- ¶12 National statistical legislation or data sharing policy that explicitly permits sharing of statistical data with foreign counterparts (or a privacy and confidentiality assessment confirming that exchange is lawful).
- ¶13 Identified counterpart agency in partner country with comparable data mandate.

¶14 Technical requirements:

- ¶15 Common or mappable spatial reference systems (WGS84 recommended) and agreed temporal reference period.
- ¶16 Metadata standard adopted by both parties. ISO 19115 is the minimum recommended standard for geographic data.

3. Guidance Material

¶1 Ocean accounting is inherently transboundary. Large Marine Ecosystems (LMEs) span multiple jurisdictions¹. Shared fish stocks cannot be assessed without data exchange between the flag states and coastal states involved, and ecosystem processes – ocean currents, pollution plumes, species migrations – do not respect political boundaries. The SEEA Ecosystem Accounting framework acknowledges that “ecosystem accounting may cover sub-national to supranational domains”², implicitly requiring cooperative data input wherever accounting areas straddle national boundaries.

¶2 This section provides guidance across five dimensions: conceptual framing (Section 3.1), governance and legal arrangements (Section 3.2), technical standards for data exchange (Section 3.3), institutional coordination mechanisms (Section 3.4), and reporting and integration (Section 3.5).

3.1 Conceptual Framework

¶1 “Transboundary” in the ocean accounting context carries three distinct but interrelated meanings, each with implications for what data are needed and how they should be exchanged.

¶2 **Geographic transboundary.** Ecosystems and the resources they host straddle Exclusive Economic Zone (EEZ) boundaries. The Coral Triangle – shared among Indonesia, Malaysia, the Philippines, Papua New Guinea, Solomon Islands, and Timor-Leste – is a canonical example: any single-country coral reef account captures only a fraction of an ecologically coherent system. Shared fisheries stocks (assessed under UNCLOS Articles 63 and 64) and transboundary pollution events similarly require data from multiple national systems for a complete accounting picture. UNCLOS Article 63 covers stocks occurring within the EEZs of two or more coastal states and stocks straddling the EEZ and adjacent high seas. Article 64 covers highly migratory species (such as tuna and billfish) managed primarily through Regional Fisheries Management Organisations (RFMOs). Compilers should route data access requests to the appropriate body: bilateral or sub-regional arrangements for Article 63 straddling stocks, and the relevant RFMO for Article 64 highly migratory species.

¶3 **Jurisdictional transboundary.** Data collected by one state are needed by another to compile accounts. A fishing vessel flagged in State A but landing catch in State B may appear in neither country’s accounts without an exchange of vessel monitoring and landing records. Similarly, economic activity data for ocean industries that operate across borders – maritime transport, off-shore energy exploration – may be held by the country where the activity is registered rather than the country where the environmental impact occurs. Jurisdictional transboundary data exchange addresses these mismatches between data custody and accounting need.

¶4 **Ecosystem transboundary.** Ecological processes that sustain ocean ecosystem services operate independently of political boundaries. Ocean currents that distribute nutrients, larval dispersal that connects reef systems across EEZs, and migratory species that cycle through the high seas all generate ecosystem services that accrue to multiple countries. Accounting for these services – and for the degradation they may suffer – requires integrating biophysical data from multiple national monitoring systems and, in some cases, from international observation platforms such as Argo floats and the Global Ocean Observing System (GOOS).

¶5 These three senses are not mutually exclusive. A shared mangrove ecosystem (geographic transboundary) may generate carbon sequestration services (ecosystem transboundary) that are relevant to both countries' nationally determined contributions under the Paris Agreement, requiring exchange of both extent and condition data (jurisdictional transboundary). Compilers should identify which sense or senses apply to each data gap they face, as this determines which legal instruments and coordination mechanisms are relevant.

¶6 **Relationship to TG-4.7.** TG-4.7 addresses coordination among domestic agencies – the NSO, fisheries authority, environmental monitoring body, and other national actors that hold relevant data. TG-4.12 extends this to international coordination: the same committee models, data sharing agreement elements, and trust frameworks described in TG-4.7 have regional analogues, but the legal instruments differ (bilateral treaties rather than national MOUs), the institutional actors differ (regional fisheries bodies and regional seas secretariats rather than national line agencies), and the confidentiality regime differs (considerations of national sovereignty alongside statistical confidentiality). Compilers should read TG-4.7 before TG-4.12. This Circular assumes familiarity with TG-4.7's three committee models, trust framework dimensions, and modular implementation phases.

¶7 **SEEA EA boundary-setting.** The SEEA EA permits ocean accounting areas to be defined at any scale, from a sub-national coastal zone to a multi-country Large Marine Ecosystem.³ Where a country chooses to compile accounts for an LME or shared sea, transboundary data exchange is a structural requirement of the accounting boundary chosen. Countries should therefore clarify their intended accounting boundary (see TG-4.7 Section 3.1 and **TG-0.8 Implementation Readiness Assessment**) before designing transboundary data exchange arrangements, so that exchange agreements are scoped to match the accounting area.

3.2 Governance and Legal Arrangements

¶1 Transboundary data exchange for ocean accounting operates within a layered architecture of international legal instruments, regional conventions, and bilateral agreements. This section describes that architecture using a tiered framework and identifies the key instruments at each tier.

¶2 Tier 1 – Global treaty obligations.

¶3 UNCLOS (UN Convention on the Law of the Sea, 1982) is the foundational instrument⁴. Several provisions create direct obligations or permissions for data sharing relevant to ocean accounting:

- ¶4 *Articles 61–63:* Coastal states must cooperate in the conservation and management of straddling stocks. This obligation creates a legal basis for exchanging stock assessment data, catch records, and effort data with neighbouring states, and provides a ready instrument for including shared fisheries data in national accounts.
- ¶5 *Article 64:* Coastal states and states fishing for highly migratory species must cooperate, directly or through RFMOs, to ensure conservation and optimum utilisation of such species throughout the region. RFMO data access is therefore the primary channel for accounting data on tuna, billfish, and other highly migratory species.
- ¶6 *Article 123:* States bordering semi-enclosed seas (as defined in Article 122 – gulfs, basins, or seas surrounded or nearly surrounded by two or more states and connected to another sea or ocean by a narrow outlet, such as the Mediterranean, Baltic, Caribbean, and Persian Gulf) are required to coordinate the exercise of their rights and duties, including in relation to the protection

of the marine environment. Regional bodies established under Article 123 frequently have associated data sharing protocols that can be activated for ocean accounting purposes. Compilers in open-coast jurisdictions without semi-enclosed sea borders should rely instead on Part XII and RFMO frameworks.

- ¶7 *Part XII (Articles 192–237)*: Obligations to protect and preserve the marine environment include information sharing on pollution events and environmental impacts, and provide a basis for exchanging ecosystem condition data that feeds ocean accounts.
- ¶8 *Part XIII (Article 238–265)*: States and international organisations have the right to conduct marine scientific research, and sharing of research data is encouraged (Article 244). Whilst it does not directly create an obligation to share accounting data, Part XIII provides a permissive legal framework within which accounting data can be shared under scientific cooperation agreements.

¶9 The Agreement under UNCLOS on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ Agreement, 2023) introduces new data sharing obligations for marine genetic resources and Environmental Impact Assessments in the high seas.⁵ Countries with accounting interests in the high seas or in exclusive economic zones adjacent to areas beyond national jurisdiction should assess the BBNJ Agreement's data provisions as a potential source of both obligations and data flows for ocean accounting. (As of May 2026 the BBNJ Agreement had not yet entered into force. Countries should monitor ratification progress and assess data provision obligations accordingly.)

¶10 The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (2010, in force 2014) creates obligations for access to and sharing of biological samples and associated genetic resource data.⁶ Where ocean accounting extends to marine genetic resources or biodiversity observation data that include genetic resource information – relevant for ecosystem condition accounts in high-biodiversity areas – compilers should assess whether the Nagoya Protocol's access and benefit-sharing provisions apply to the data exchange. The BBNJ Agreement's data sharing provisions build on the Nagoya Protocol framework for areas beyond national jurisdiction.

¶11 The UN Fundamental Principles of Official Statistics (Principle 6) affirms that individual data collected by statistical agencies are confidential⁷ and are to be used exclusively for statistical purposes. This principle applies when a country shares statistical microdata internationally, and data sharing agreements must include provisions confirming that statistical confidentiality is upheld by the receiving party.

¶12 **Tier 2 – Regional seas conventions and equivalent bodies.**

¶13 Regional seas conventions provide the most operationally accessible legal framework for transboundary ocean accounting data exchange. Each convention establishes a secretariat, working groups, and often data exchange protocols that can serve as the institutional infrastructure for accounting data sharing:

- ¶14 *OSPAR Convention* (NE Atlantic): OSPAR's Coordinated Environmental Monitoring Programme (CEMP) requires contracting parties to submit environmental monitoring data to the OSPAR Commission⁸. These data streams – covering marine biodiversity, hazardous substances, eutrophication, and radioactive substances – are directly relevant to ocean condition accounts and are already aggregated and quality-assured by the OSPAR Secretariat. Compilers should note that the aggregation is the constraint as well as the service: see §3.5.4 below on requesting regional data at a resolution an account can use.
- ¶15 *HELCOM* (Baltic Sea): HELCOM's COMBINE monitoring programme and its Baltic Sea Environment Fact Sheets provide harmonised environmental data for the Baltic. The HELCOM system is directly applicable to countries compiling accounts for shared Baltic Sea ecosystems⁹.

- ¶16 *Nairobi Convention* (Western Indian Ocean): Covers the coastal and marine environment of East Africa and the Western Indian Ocean island states, and provides a coordination framework for countries such as Kenya, Tanzania, Mozambique, Madagascar, Comoros, Seychelles, and Mauritius.
- ¶17 *Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security* (CTI-CFF): A multilateral partnership among the six Coral Triangle countries providing a platform for harmonised data collection and exchange on reef health, fisheries, and coastal communities¹⁰ – directly applicable to ocean accounting in one of the world’s highest-biodiversity marine areas.
- ¶18 *South Pacific Regional Environment Programme* (SPREP) and *Pacific Community* (SPC): These organisations support harmonised environmental and fisheries data collection across Pacific Island countries, and provide data infrastructure that ocean accounting can draw upon.
- ¶19 *Regional Fisheries Management Organisations* (RFMOs): WCPFC, IOTC, CCAMLR, ICCAT, and equivalent bodies compile and hold stock assessment data, vessel monitoring records, and catch statistics that are directly usable in ocean accounts. RFMOs typically have observer status provisions and data access protocols for member states.

¶20 Tier 3 – Bilateral and sub-regional agreements.

¶21 Where global or regional instruments do not provide a sufficient legal basis for the specific data exchange needed, bilateral MOUs or data sharing agreements between countries provide a pragmatic alternative. The elements of such agreements are analogous to those described for domestic data sharing agreements in **TG-4.7 §3.2**, with the following additional considerations specific to bilateral international agreements:

- ¶22 *Scope and reciprocity*: International agreements should specify whether the exchange is reciprocal (both parties provide equivalent data types) or asymmetric (one party provides data the other lacks), and should include provisions for reviewing the scope as accounting programmes mature.
- ¶23 *Confidentiality and national sovereignty*: The agreement must confirm that data exchanged will be used solely for ocean accounting purposes, will not be shared with third parties without consent, and will not be used for regulatory, enforcement, or trade purposes. National sovereignty considerations may mean that certain data (e.g., vessel positions in near-real-time, military maritime activity) are excluded from exchange even when they would be relevant to accounting.
- ¶24 *Dispute resolution*: Transboundary agreements should specify a dispute resolution mechanism – typically through the relevant regional seas secretariat or through diplomatic channels – in the event of disagreements about data quality, interpretation, or use.
- ¶25 *Review and termination*: A defined review cycle (typically three to five years) and a termination clause with appropriate notice period are standard in bilateral data agreements.

¶26 *Table 3.2.1: Governance framework for transboundary ocean accounting data*

Tier	Instrument type	Examples	Data types typically available
1. Global	UNCLOS, BBNJ Agreement, Nagoya Protocol, UN Fundamental Principles	UNCLOS Arts. 61–64, 123	Shared fisheries data, MSR data, pollution event data, genetic resource data
2. Regional	Regional seas conventions, RFMOs	OSPAR, HELCOM, CTI-CFF, WCPFC	Environmental monitoring, catch/effort, ecosystem condition
3. Bilateral	MoU, data sharing agreement	Country-to-country agreements	Any agreed data type, including statistical microdata

3.3 Technical Standards for Data Exchange

¶1 Transboundary data exchange requires both parties to adopt compatible technical standards for data structure, metadata, and transmission. The full catalogue of standards relevant to ocean accounting – spanning geospatial metadata, web service interfaces, statistical exchange, biodiversity occurrence records, and catalogue discovery – is treated in **TG-4.6 Data Harmonisation and Interoperability**. This section identifies only the cross-border-specific requirements that supplement that baseline.¹¹

¶2 For transboundary flows specifically, three commitments should be embedded in every bilateral or regional data exchange arrangement: (a) ISO 19115 metadata must accompany every geospatial dataset transferred, so that receiving compilers can assess fitness for purpose before integration, consistent with the quality assurance principles in **TG-0.7 Quality Assurance Principles**; (b) WGS84 (EPSG:4326) and ISO 8601 date-time notation should be used as common reference systems unless a regional authority specifies otherwise, with fisheries data referenced to FAO Major Fishing Areas or ICES statistical rectangles as appropriate to the region; and (c) catalogue records should be registered in the IOC-UNESCO Ocean Data and Information System (ODIS) using DCAT-compatible metadata, which enables partner countries to discover and access data without ad hoc requests.

¶3 Receiving countries should apply the data harmonisation procedures described in **TG-4.6 Data Harmonisation and Interoperability** to all data received under transboundary agreements before integrating them into national accounts. This includes classification concordance where partner countries use different species taxonomies, sector classifications, or spatial aggregation units.

3.4 Institutional Coordination Mechanisms

¶1 TG-4.7 describes three national committee models (NSO-led, multi-agency, nested) through which domestic agencies coordinate ocean accounting data. These models have regional analogues, and the TG-4.7 typology provides a useful reference for understanding the corresponding international coordination structures. The defining difference is authority: at the domestic level, a committee can compel data sharing through statutory mandate or Ministerial direction, whilst at the international level, participation is voluntary. Trust and mutual benefit (as described in TG-4.7 Section 3.3) therefore become even more central to effective coordination.

¶2 **Bilateral Technical Working Groups (BTWGs)**. The closest international analogue to the TG-4.7 Model A (NSO-led) bilateral data sharing agreement is the BTWG: a small expert group drawn from the NSO or lead environmental agency of each country, meeting annually to agree data exchange schedules, resolve quality discrepancies, and review data use. BTWGs are most appropriate where two countries share a well-defined accounting area (e.g., a jointly managed strait or shared mangrove coast) and have existing statistical cooperation at the national level. The BTWG should operate under a bilateral MoU (see Section 3.2) that formalises its mandate and data exchange obligations.

¶3 **Regional coordination nodes**. IOC Sub-Commissions (IOCARIBE for the Caribbean, IOCINDIO for the Indian Ocean, WESTPAC for the Western Pacific) provide pre-existing intergovernmental infrastructure for ocean data exchange. These bodies function as a regional analogue to the TG-4.7 Model C (nested) committee, coordinating data flows across many countries through a regional secretariat. Countries should map their existing participation in IOC Sub-Commission activities and assess whether ocean accounting data can be routed through those existing channels rather than requiring new bilateral arrangements. Holdings exposed through the IOC's Ocean Data and Information System (ODIS) can be discovered without a bilateral request at all¹².

¶4 Regional seas secretariats (OSPAR, HELCOM, Nairobi Convention, CTI-CFF, SPREP) serve a similar coordination function within their geographic scope. Their joint monitoring programmes and quality assurance frameworks provide harmonised data that countries can draw upon directly for ocean accounts, reducing the need for country-to-country bilateral exchanges.

¶5 **Regional Fisheries Management Organisations (RFMOs).** For shared fisheries accounts, RFMOs are the primary institutional coordination mechanism. WCPFC (Western and Central Pacific), IOTC (Indian Ocean), CCAMLR (Antarctic), ICCAT (Atlantic tunas), and their equivalents compile and hold catch and effort data, stock assessment outputs, and vessel monitoring records. Member states have existing obligations to submit data to these bodies and existing rights to access compiled data products. Ocean accounting compilers should engage with their country's RFMO focal points to establish data access arrangements that feed directly into fisheries ecosystem accounts and asset accounts for fish stocks. The guidance in **TG-6.7 Fisheries Accounting: Integrating Stock Assessment** (when available) provides further detail on using RFMO data in national accounts.

¶6 **Data stewardship responsibilities.** In transboundary arrangements, each country retains stewardship of the primary data it generates, whilst regional bodies and bilateral partners hold derived products agreed under the exchange arrangement. Data sharing agreements should specify: (a) which party holds the authoritative version of each dataset; (b) embargo periods before data are made publicly available; (c) attribution requirements when data are used in published accounts; and (d) update obligations – the frequency with which the custodian party will refresh the shared data.

¶7 **Capacity building.** Transboundary data sharing typically requires aligned data collection infrastructure – common survey methods, equipment calibration standards, and metadata practices – before exchange becomes operationally feasible. Capacity building in the transboundary context encompasses three types of support: technical training on the metadata standards and exchange formats specified in Section 3.3; equipment harmonisation for joint surveys where two countries collect biophysical data in a shared sea area under a coordinated protocol; and staff exchanges that transfer institutional knowledge about data systems and compilation practices between partner organisations. Capacity gaps should be documented explicitly in the bilateral MoU rather than left as informal intent: the agreement should identify which party (or which external programme) will address each gap and within what timeframe, so that capacity asymmetry is managed as a scheduled workplan item rather than left as an open risk. The GOAP Secretariat is the primary entry point for accessing GOAP-funded technical assistance. Countries may also engage IOC capacity development initiatives (including the IOC Ocean Teacher Global Academy) and the capacity-building provisions of the relevant RFMO. Unequal capacity between partners that is not explicitly addressed frequently causes transboundary data exchange to default to one-directional flows that do not sustain long-term cooperation.

¶8 This architecture is illustrated in Figure 4.12.1.

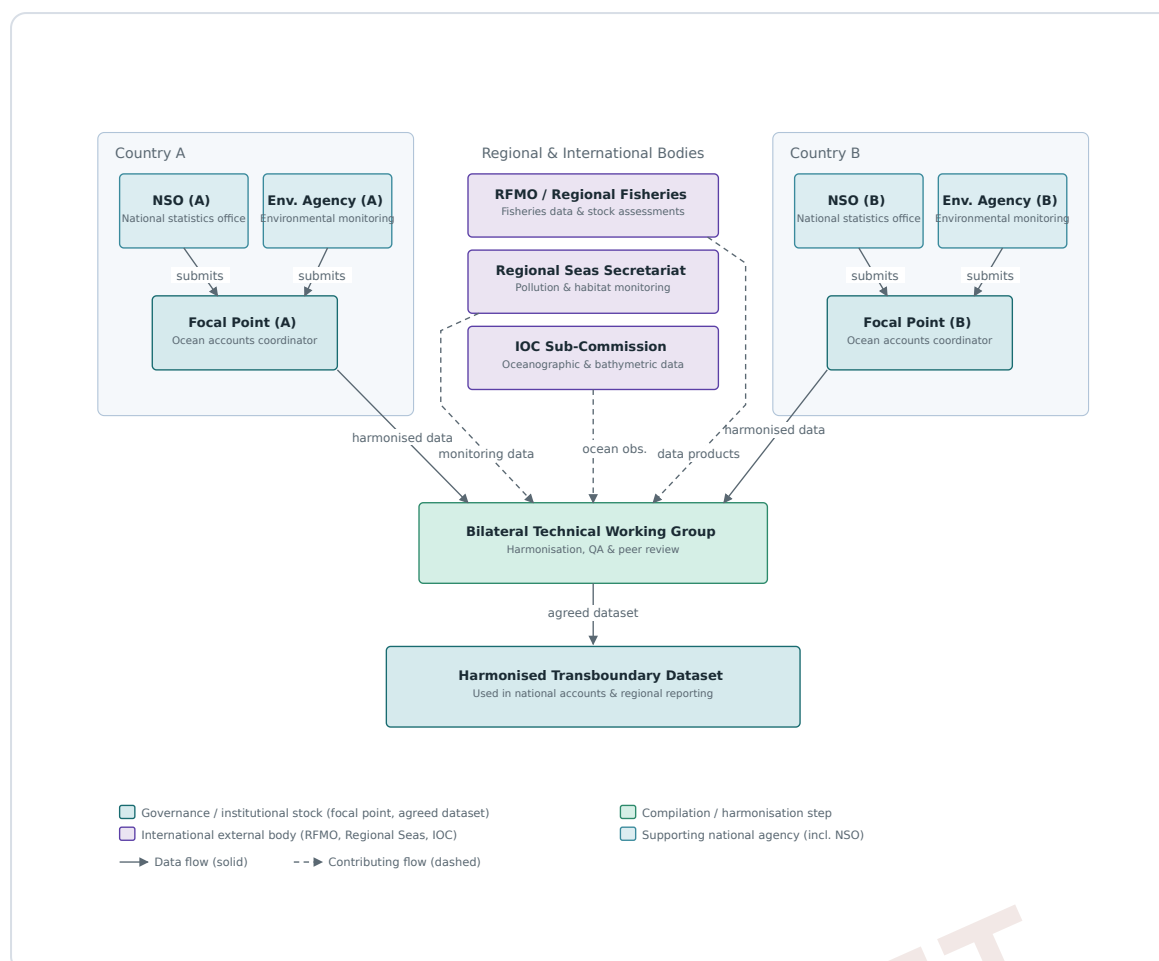


Figure 4.12.1 Two countries and three international bodies feed a bilateral TWG that produces one harmonised transboundary ocean-accounts dataset. Teal marks governance stocks; violet marks international bodies. National routes run through each Ocean Accounts Focal Point.

Source: TG-4.12 draft, §3.4 (institutional coordination mechanisms) and §3.5 (reporting and integration).

3.5 Reporting and Integration

¶1 Data received under transboundary agreements serve three distinct reporting purposes, each with different output requirements. This section addresses all three in sequence.

¶2 Section 3.5.1 Regional aggregation of national ocean accounts.

¶3 Regional seas bodies and sub-regional groupings increasingly request harmonised ocean accounting data from member states for regional environmental assessments. OSPAR's Quality Status Reports, HELCOM's State of the Baltic Sea reports, the CTI-CFF Regional State of the Coral Triangle Report, and SPREP's State of the Pacific Ocean report all require country-level data that can be aggregated regionally. Countries should align the spatial boundaries, temporal reference periods, and account classifications used in their national ocean accounts with the regional reporting requirements of the bodies of which they are members.

¶4 Alignment reduces rework: where a country has designed its ocean accounts to be compatible with regional reporting requirements, the same account tables can serve both national and regional purposes. Countries should consult regional seas secretariats early in the ocean accounting design process to understand reporting templates and data submission requirements.

¶5 GOAP maintains a central data registry for member country ocean accounts. Countries with transboundary data exchange arrangements should notify the GOAP Secretariat of those arrangements so that cross-country accounting boundaries are correctly reflected in the registry and to

avoid double-counting where the same shared ecosystem is reported by two countries. GOAP reporting templates for shared ecosystem accounts should align with the partner country's national account submissions. The GOAP Secretariat provides harmonisation guidance for countries compiling accounts that overlap geographically.

¶6 **Section 3.5.2 Global frameworks.**

¶7 Three global frameworks make direct use of transboundary ocean accounting data:

- ¶8 *SDG 14 (Life Below Water)*: Indicators 14.2.1 (use of ecosystem-based approaches in managing marine areas), 14.4.1 (proportion of fish stocks within biologically sustainable levels), and 14.5.1 (coverage of protected areas) all require data that may be held by RFMO or regional monitoring systems rather than individual national agencies.¹³ Countries with shared fish stocks or transboundary MPAs should use their RFMO and regional seas data exchange channels to access the indicator inputs they cannot compile from national data alone.
- ¶9 *Kunming-Montreal Global Biodiversity Framework (GBF)*: Target 3 (30x30 – 30% of areas under effective conservation by 2030) requires area-based accounting for marine protected areas that often straddle EEZ boundaries.¹⁴ The GBF monitoring framework specifies the indicators and data requirements that countries must align with when contributing transboundary MPA data.¹⁵ Transboundary MPA accounting should draw upon the joint monitoring programmes of regional seas conventions and IOC sub-commissions.
- ¶10 *IPBES and IPCC*: The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and the Intergovernmental Panel on Climate Change both request national and regional ecosystem accounting data for global assessments. Transboundary data exchange that feeds national ocean accounts simultaneously enriches these global scientific processes.

¶11 **Section 3.5.3 Integration into national accounts.**

¶12 When data received under a transboundary agreement are incorporated into national ocean accounts, compilers must apply three additional steps beyond those required for domestic data:

¶13 *Harmonisation*: Apply the classification concordance and unit standardisation procedures in **TG-4.6 Data Harmonisation and Interoperability** to all received data before integration. This is particularly important for fisheries statistics, where species classification systems (FAO ASFIS, national systems), spatial aggregation units (FAO areas, ICES rectangles, national EEZ zones), and reporting periods may differ between countries.

¶14 *Lineage documentation*: Per the quality assurance requirements of **TG-0.7 Quality Assurance Principles**, all externally sourced data must be documented with: the originating country and custodian agency; the legal basis for the exchange (treaty article, MoU reference, or RFMO data access agreement); the version and vintage of the data received; any transformations applied during harmonisation; and known limitations or data quality caveats. This lineage documentation should be published as part of the national accounts metadata in accordance with the transparency requirements of the UN Fundamental Principles of Official Statistics.

¶15 *Attribution*: Published accounts should acknowledge the contributing country or regional body where data received under a transboundary agreement contributes materially to a published indicator or account table. Attribution builds trust and encourages continued data sharing (see TG-4.7 Section 3.3 on trust frameworks).

¶16 ⓘ **Worked Examples**

¶17 **TG-5.7 Thailand** and **TG-5.10 Vietnam** illustrate the institutional and technical arrangements through which two ASEAN countries aligned their fisheries accounting data for the Gulf of Thailand, including an RFMO-mediated data exchange and bilateral harmonisation of catch classification systems.

¶18 **TG-5.3 Fiji** and **TG-5.9 Vanuatu** demonstrate Pacific Island country cooperation on coral reef ecosystem accounting across shared reef systems, using the Pacific Community (SPC) as a regional data node and IOC-WESTPAC monitoring data as the primary ecosystem condition input.

¶19 Both case studies are on hold pending Section 5 content development. Compilers should consult the GOAP Secretariat for interim worked examples.

¶20 **Section 3.5.4 Requesting regional data at a resolution the account can use.**

¶21 Regional bodies publish condition information in the geometry their own assessment cycle requires, which is normally an aggregate for the convention area and its sub-regions. An ecosystem account needs the same measurements attributed to ecosystem types. The two geometries are not interchangeable, and the mismatch defeats a condition account even where the underlying monitoring is long-running and dense.

¶22 The preliminary ecosystem accounts for the OSPAR maritime area are the documented case. OSPAR holds extensive time series through ODIMS and publishes condition indicators – acidity, eutrophication, species diversity, sea surface temperature, seagrass cover, fish stock state – through its Quality Status Reports, several of them already aligned with this Technical Guidance. The condition account nonetheless could not be compiled, because the indicators were published as aggregates for the convention area and its five regions and could not be disaggregated to the ecosystem types used in the extent account. The compilers' recommendation was that regional data collection and reporting shift from a region-based to an ecosystem-based approach, and that the regional data platform carry that harmonisation on behalf of the parties¹⁶.

¶23 Two practical consequences for a compiler requesting data from a regional body:

- ¶24 *Ask for the observations, not the indicator.* A published regional indicator is generally a terminal product: aggregated, and often not reversible to the station or grid cell it came from. Request the underlying station, survey or grid-level measurements with their coordinates and dates, and derive the ecosystem-type attribution nationally. Where only the aggregate can be released, record it as a condition indicator for the region under **TG-2.1 Biophysical Indicators** and do not enter it against an ecosystem type in the condition account.
- ¶25 *Raise reporting geometry with the secretariat, not just data access.* A data sharing agreement that secures the existing regional product still leaves the account uncompileable. The change a regional accounting programme needs is in the monitoring and reporting design, which sits with the convention's technical working groups; countries that require ecosystem-attributed condition data should carry that requirement into those groups alongside the bilateral access arrangements described in §3.2.

¶26 The same point applies in reverse to the alignment argument in §3.5.1: a country designing its national ocean accounts to serve regional reporting should confirm that the regional templates request ecosystem-attributed data, and should not assume that satisfying a region-based reporting template will produce data usable in a regional ecosystem account.

4. Acknowledgements

¶1 **Authors:** [To be confirmed]

¶2 **Reviewers:** [To be confirmed]

5. References

1. ¶1 Sherman, K. and Hempel, G. (eds.), “The UNEP Large Marine Ecosystem Report: A perspective on changing conditions in LMEs of the world’s Regional Seas” (UNEP Regional Seas Reports and Studies No. 182, UNEP, 2008). See also the LME Hub portal at [lmehub.net](https://www.lmehub.net/) (<https://www.lmehub.net/>).
2. ¶2 United Nations, “System of Environmental-Economic Accounting – Ecosystem Accounting” (United Nations, 2021), para. 1.47.
3. ¶3 SEEA EA (2021), paras. 3.18–3.30 (ecosystem accounting areas and boundaries).
4. ¶4 United Nations Convention on the Law of the Sea (UNCLOS), opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994), Articles 61–64, 123, Part XII, Part XIII.
5. ¶5 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), adopted 19 June 2023, UN Doc. A/CONF.232/2023/4.
6. ¶6 Convention on Biological Diversity, “Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity” (CBD, 2011, in force 2014). Available at [cbd.int/abs](https://www.cbd.int/abs) (<https://www.cbd.int/abs>).
7. ¶7 United Nations Statistical Commission, “Fundamental Principles of Official Statistics” (United Nations, 2014), Principle 6 (Confidentiality).
8. ¶8 OSPAR Commission, “OSPAR Coordinated Environmental Monitoring Programme (CEMP) Guidelines” (OSPAR, 2023). Available at [ospar.org](https://www.ospar.org) (<https://www.ospar.org>).
9. ¶9 HELCOM, “Monitoring and Assessment Strategy” (HELCOM, 2021). Available at helcom.fi (<https://helcom.fi>).
0. ¶10 Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security, “CTI-CFF Regional Plan of Action 2.0” (CTI-CFF, 2022). Available at coraltriangleinitiative.org (<https://coraltriangleinitiative.org>).
1. ¶11 Relevant technical standards include ISO 19115 (geospatial metadata), OGC API – Features and Web Coverage Service (geospatial interchange), NetCDF-CF (gridded oceanographic data), SDMX (statistical exchange), Darwin Core via OBIS/GBIF (species occurrence), DCAT v2 (catalogue discovery), and GeoPackage (vector exchange) – see [TG-4.6 Data Harmonisation and Interoperability](#) for full treatment.
2. ¶12 IOC-UNESCO, “Ocean Data and Information System (ODIS)” (IOC-UNESCO, 2022). Available at odis.org (<https://odis.org>).
3. ¶13 United Nations, “Transforming our world: the 2030 Agenda for Sustainable Development” (United Nations, 2015), Goal 14 indicators (SDG 14.2.1, 14.4.1, 14.5.1).
4. ¶14 Convention on Biological Diversity, “Kunming-Montreal Global Biodiversity Framework” (CBD/COP/DEC/15/4, 2022), Target 3.
5. ¶15 Convention on Biological Diversity, “Kunming-Montreal Global Biodiversity Framework Monitoring Framework” (CBD/COP/DEC/15/5, 2022). Updated monitoring framework guidance available from the CBD Secretariat at [cbd.int/gbf/monitoring](https://www.cbd.int/gbf/monitoring) (<https://www.cbd.int/gbf/monitoring>).
6. ¶16 Alarcon Blazquez, M.G., van der Veeren, R., Gacutan, J. and James, P.A.S. (2023). ‘Compiling preliminary SEEA Ecosystem Accounts for the OSPAR regional sea: experimental findings and lessons learned’. *One Ecosystem*, 8, e108030. doi:10.3897/oneeco.8.e108030.