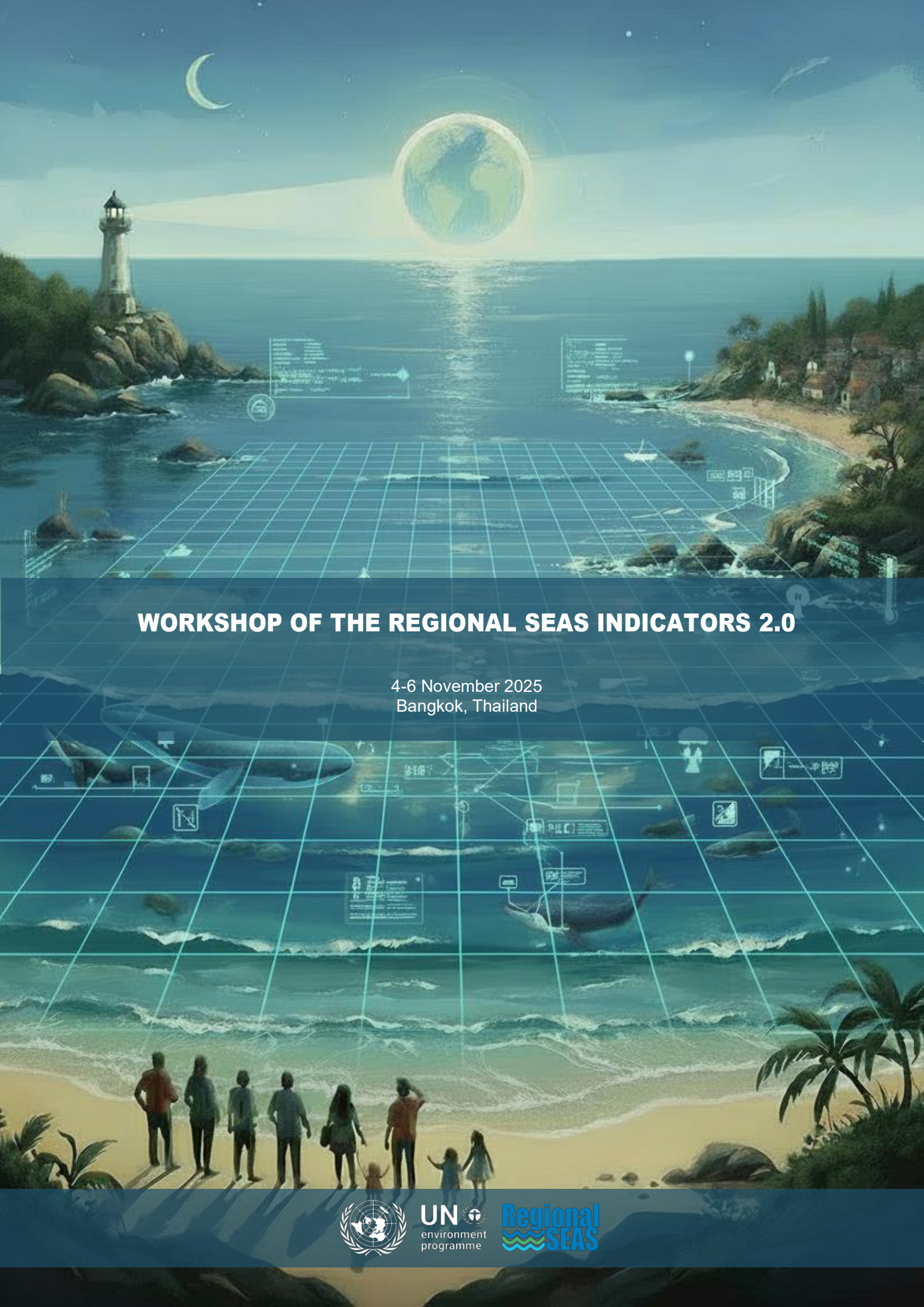

WORKSHOP OF THE REGIONAL SEAS INDICATORS 2.0

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UN environment programme
Regional SEAS

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I. BACKGROUND

The Regional Seas Programme, established by the United Nations Environment Programme (UNEP) in 1974, encompasses 18 Regional Seas Conventions and Action Plans (Regional Seas) dedicated to the protection and sustainable management of marine and coastal environments. In 2016, UNEP adopted the Regional Seas Core Indicator framework comprising 22 indicators, providing a common foundation for marine, and coastal environmental assessment and reporting across all the Regional Seas.

With the adoption of the Kunming-Montreal Global Biodiversity Framework (GBF), Global Framework on Chemicals, and ratification of the Agreement on Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ Agreement), and the ongoing implementation of the 2030 Agenda for Sustainable Development (SDG 14), the 22 indicators required review, refinement, and alignment with global frameworks, the agreement on new Regional Seas Strategic Directions 2026-2029, and related Multilateral Environmental Agreements (MEAs).

Preliminary mapping and adoption surveys carried out by partner institutions have provided valuable inputs, which now need to be translated into an operational and consensus-based indicator framework appropriate to the regional level.

II. VISION

The Regional Seas Indicator framework 2.0 establishes a unified, science-based and region-driven monitoring vision that enables all Regional Seas to speak with one voice on the state of marine and coastal ecosystems. It provides a coherent foundation for assessing regional priorities, aligning diverse monitoring practices, and generating comparable evidence that strengthens both regional collaboration and global environmental reporting.

Over the long term, the Regional Seas Indicator Framework 2.0 seeks to:

- Provide one coherent indicator system that reflects shared regional priorities.
- Strengthen national and regional capacities for integrated monitoring, federated data supply, and sustainable data management.
- Strengthen contributions to global environmental processes through aligned monitoring.
- Support countries and regions in delivering actionable, policy-relevant insights.
- Establish a common language and harmonized structure that enhance consistency in reporting, facilitate collaboration, and support aligned decision-making across all Regional Seas programmes.

Ensure that monitoring remains feasible, implementable and sustainable over time. The vision positions Indicator framework 2.0 as the common language for reporting, collaboration and decision-making across the Regional Seas.

III. OBJECTIVE

The objective of the Regional Seas Indicator framework 2.0 is to establish a harmonized, policy-relevant and scientifically consistent monitoring framework that can be agreed across the Regional Seas Conventions and Action Plans. The updated indicator system strengthens the collective capacity of regions to generate assessments, contribute coherently to global environmental processes and support evidence-based decision-making at regional and national levels.

This objective directly reflects the ambitions set out in the *Regional Seas Strategic Directions 2026–2029*, which call for a more integrated, aligned and coherent approach to marine and coastal monitoring. Indicator framework 2.0 therefore serves as a core mechanism for operationalizing these strategic directions by refining the existing 22 indicators, aligning them with the Kunming - Montreal Global Biodiversity Framework (GBF), the Global Framework on Chemicals (GFC), the BBNJ Agreement, the 2030 Agenda for Sustainable Development, and other relevant Multilateral

Environmental Agreements (MEAs). It also translates adoption surveys and technical mapping exercises into a practical framework that is feasible, implementable and region driven.

Ultimately, the objective of Indicator framework 2.0 is to provide a shared reference system that enhances consistency, improves reporting efficiency, strengthens capacity-building and technical cooperation efforts and reinforces collaboration across the entire Regional Seas network, fully in line with the long-term vision articulated in the Regional Seas Strategic Directions 2026 - 2029.

IV. METHODOLOGY

The development of the Regional Seas Indicator Framework 2.0 follows a structured, federated and iterative methodology designed to ensure scientific consistency, policy relevance and long-term sustainability.

a. Collaborative development across UNEP entities, conventions and partners

The framework is co-developed with UNEP Divisions, the Chief Scientist Office, the Chief Digital Office, Regional Seas Conventions and Action Plans, and technical partners supporting GBF, SDG 14, GFC and other MEA reporting processes. This ensures alignment across global frameworks and coherence with UNEP's internal scientific and digital architecture.

b. Incremental and tiered operationalization

The indicator system is expanded and harmonized through an incremental approach that respects the tier structure (Tier I–IV). Regions may begin with Tier I indicators and progressively operationalize higher-tier indicators as methodologies mature and data availability improves.

c. Long-term indicator working group and continuous metadata refinement

A standing Regional Seas Indicator Working Group supports ongoing methodological harmonization, metadata updates, metric refinement, peer exchange and alignment with global indicator methodologies as they evolve.

d. Multilateral and inter-agency resource mobilization

The framework integrates a multilateral resource mobilization strategy to support indicator uptake, regional capacity building, data architecture, and sustained implementation in collaboration with partners and donors.

e. Country-level relevance and UNEP-wide usability

The methodology ensures that monitoring efforts remain relevant to national contexts and accessible to UNEP internal users, enabling regions and countries to generate actionable insights that feed into global environmental assessment and reporting processes.

V. REGIONAL SEAS INDICATOR FRAMEWORK 2.0 OUTLINE

a. Indicator classification:

The Regional Seas Indicator Framework 2.0 classifies all indicators using three complementary dimensions. This approach strengthens scientific clarity, operational coherence and flexible implementation across all Regional Seas. The system first organizes indicators according to UNEP's triple planetary crisis framing: Biodiversity, Pollution and Climate Change. A fourth category, Cross cutting, is included for indicators that span several thematic domains or support integrated ecosystem-based management.

A common priority standard distinguishes indicators of shared relevance from those that address region specific needs. In addition, a tier structure provides clarity on methodological maturity and operational readiness. This structure offers a clear pathway for progressive harmonization and long-term development through the Regional Seas Indicator Working Group.

i. Thematic Category

This dimension groups all indicators under four thematic areas: Biodiversity, Pollution, Climate Change and Cross cutting. The Cross-cutting category captures indicators that support multiple domains or integrated ecosystem-based approaches.

ii. Priority Standard

This dimension defines the level of common relevance for each indicator.

- Core indicators represent elements of importance to all Regional Seas. They form the minimum common foundation for group level reporting to global processes. The Regional Seas aim to eventually monitor and report on these indicators.
- Supplementary indicators provide additional detail, address regional specificities or fill information gaps. Regions may adopt these indicators where relevant for regional or global reporting.
- Deprioritized indicators have been removed from the shared set. Regions may continue to monitor them individually where appropriate.

iii. Tier Structure

This dimension clarifies methodological readiness and determines where further work is required.

- Tier I indicators have globally harmonized methods that are already suitable for regional application. Data are available and accessible.
- Tier II indicators also have global methods but need review or adaptation before they can be fully operationalized at the regional level.
- Tier III indicators use regionally developed methodologies. Data are available, and harmonization with global methods is not expected or required.
- Tier IV indicators are still conceptual or in a pilot stage. They require further development led by the Regional Seas Indicator Working Group.

b. Regional Seas Indicator Framework 2.0 Outline

16 Core Indicators | 6 Complementary Indicators | 7 Removed Indicators

Biodiversity
Pollution
Climate Change
Cross-cutting

No.	Grouping	Indicator	Classification
1	Biodiversity	30x30: Coverage of protected areas and Other Effective Conservation Measures (OECMs). [1]	Core
2	Biodiversity	Area under restoration	Core
3	Biodiversity	Status of marine and coastal critical ecosystems and threatened species	
3.1	Biodiversity	Status of critical ecosystems/habitat	Core
3.2	Biodiversity	Status of threatened species	Core
4	Biodiversity	Status and impacts of non-indigenous species and pathogens.	
4.1	Biodiversity	Status and impacts of non-indigenous species, particularly invasive species	Core
4.2	Biodiversity	Status and impacts of pathogens	Complementary
5	Pollution	Status of eutrophication in the marine environment	Core
5.1	Pollution	Concentrations of chlorophyll-a in the water column	Core
5.2	Pollution	Concentrations of nutrients in the water column	Core
5.3	Pollution	Satellite-derived chlorophyll-a data	Complementary
6	Pollution	Eutrophication: Total inputs of nitrogen and phosphorus from agriculture, sewage and atmospheric nitrogen	Complementary
7	Pollution	Concentration of marine contaminant	Core
7.1	Pollution	(i) Concentrations of selected priority contaminants	Core
7.2	Pollution	(ii) Concentrations of contaminants of emerging concern	Complementary
7.3	Pollution	(iii) Number of contingency plans to respond to pollution incidents, including oil and hazardous chemicals	Complementary
8	Pollution	Pollution hot spots: number of hotspots remediated	Complementary
9	Pollution	Levels and impact of marine litter in marine and coastal environments	Core
9.1	Pollution	Abandoned, lost or otherwise discarded fishing gear	Complementary
10	Pollution	Status of implementation of Regional Marine Litter Action Plans	Core
11	Pollution	Levels of underwater noise pollution	Complementary

[1] Optional disaggregation: 1) By protected areas and OECMs, 2) By realm, biome and by ecosystem functional group (Global Ecosystem Typology levels 2 and 3 or equivalent) 3) By areas of importance for biodiversity 4) By effectiveness (Protected Area Management Effectiveness) 5) By governance type 6) By Indigenous and traditional territories

12	Pollution	Implementation of action plans to reduce and prevent and sea-based sources of pollution, including circular economy approaches.	Core
13	Pollution	Wastewater treatment	
13.1	Pollution	% coastal urban population connected to sewage facilities.	Core
13.2	Pollution	Number of countries with wastewater treatment standards in place and operational, including safe reuse of treated wastewater and sludge and including monitoring systems.	Complementary
13.3	Pollution	Proportion of domestic and industrial wastewater flows safely treated.	Core
14	Pollution	% Port waste reception facilities considering environmentally sound management downstream	Core
15	Climate Change	Ocean warming and ocean acidification parameters	
15.1	Climate Change	Sea surface temperature	Core
15.2	Climate Change	SDG 14.3.1: Average marine acidity (pH) measured at agreed suite of representative sampling stations.	Core
15.3	Climate Change	Salinity	Complementary
15.4	Climate Change	Sea-level rise	Complementary
15.5	Climate Change	Precipitation	Complementary
15.6	Climate Change	Hydrographic changes	Complementary
16	Climate Change	Number of national and local actions and targeted measures to support climate change adaptation, including nature-based solutions, developed and implemented.	Core
17	Cross-cutting	Number of Countries using integrated management approaches for marine and coastal areas	Core
18	Cross-cutting	Extent of coastal modification and km2 of coastal reclamation	Complementary
19	Cross-cutting	Services provided by marine and coastal ecosystems, including (human health and wellbeing)	Complementary
20	Cross-cutting	Status of the transition to a sustainable Blue Economy	Complementary
21	Cross-cutting	Capacity building: Number of joint strategies, guidelines and actions on quality status assessments, monitoring programmes and knowledge management to address environmental challenges in a coordinated effort, and disseminated to relevant stakeholders	Core
22	Cross-cutting	Knowledge management and data sharing: Number of knowledge management platforms actively sharing data, tools, or assessments through global knowledge management platforms including cross-RS integration efforts.	Core

Table_1_Regional Seas Indicator Framework 2.0 Outline

c. Regional Seas Indicator Framework 2.0 Technical Sheet

16 Core Indicators | 6 Complementary Indicators | 7 Removed Indicators

Biodiversity
Pollution
Climate Change
Cross-cutting

2025. No.	2016. No.	Grouping	Indicator	Tiers	Classification	Link with Global Indicators
Biodiversity						
1	21	Biodiversity	30x30: Coverage of protected areas and Other Effective Conservation Measures (OECMs). [2]	TIER I	Core	GBF 3.1 SDG 15.1, SDG14.5
2	NEW	Biodiversity	Area under restoration		Core	GBF 2.1 SDG 15.3
3	14,15	Biodiversity	Status of marine and coastal critical ecosystems and threatened species			GBF Target A.1, A.2, A.3, A.4
3.1	15	Biodiversity	Status of critical ecosystems/habitat	TIER II	Core	GBF A.1, GBF A.2
3.2	14	Biodiversity	Status of threatened species	TIER III	Core	A3, A4
4	NEW	Biodiversity	Status and impacts of non-indigenous species and pathogens	TIER III		GBF Target 6 SDG 15.8
4.1		Biodiversity	Status and impacts of non-indigenous species, particularly invasive species		Core	
4.2		Biodiversity	Status and impacts of pathogens		Complementary	
Pollution						
5	NEW	Pollution	Status of eutrophication in the marine environment			SDG 14.1(a), GBF 7.1
5.1	1	Pollution	Concentrations of chlorophyll-a in the water column	TIER I	Core	SDG 14.1(a)
5.2	NEW	Pollution	Concentrations of nutrients in the water column	TIER III	Core	GBF 7.1
5.3	1	Pollution	Satellite-derived chlorophyll-a data		Complementary	SDG 14.1(a)
6	NEW	Pollution	Eutrophication: Total inputs of nitrogen and phosphorus from agriculture, sewage and atmospheric nitrogen	TIER III	Complementary	SDG 14.1(b) SDG 2.4
7	NEW (2&10.1)	Pollution	Concentration of marine contaminant	TIER III		SDG 14.1(a), GBF Target 7

[2] Optional disaggregation: 1) By protected areas and OECMs, 2) By realm, biome and by ecosystem functional group (Global Ecosystem Typology levels 2 and 3 or equivalent) 3) By areas of importance for biodiversity 4) By effectiveness (Protected Area Management Effectiveness) 5) By governance type 6) By Indigenous and traditional territories

7.1	2 & 10.1	Pollution	(i) Concentrations of selected priority contaminants		Core	SDG 14.1(a)
7.2	NEW	Pollution	(ii) Concentrations of contaminants of emerging concern		Complementary	GBF Target 7, SDG 12.4
7.3	NEW	Pollution	(iii) Number of contingency plans to respond to pollution incidents, including oil and hazardous chemicals		Complementary	SDG 14.2
8	10.2	Pollution	Pollution hot spots: number of hotspots remediated	TIER IV	Complementary	GBF Target 7
9	NEW & 3	Pollution	Levels and impact of marine litter in marine and coastal environments		Core	SDG 14.1(b), GBF Target 7
9.1	NEW	Pollution	Abandoned, lost or otherwise discarded fishing gear	TIER III	Complementary	SDG 14.6
10	NEW	Pollution	Status of implementation of Regional Marine Litter Action Plans	TIER IV	Core	SDG 14.1(b)
11	NEW	Pollution	Levels of underwater noise pollution	TIER III	Complementary	
12	16	Pollution	Implementation of action plans to reduce and prevent and sea-based sources of pollution, including circular economy approaches		Core	
13	17	Pollution	Wastewater treatment			
13.1	17.1	Pollution	% coastal urban population connected to sewage facilities		Core	
13.2	17.2	Pollution	Number of countries with wastewater treatment standards in place and operational, including safe reuse of treated wastewater and sludge and including monitoring systems		Complementary	
13.3	17.3	Pollution	Proportion of domestic and industrial wastewater flows safely treated.		Core	SDG 6.3.1
14	18	Pollution	% Port waste reception facilities considering environmentally sound management downstream		Core	
Climate Change						
15	4&11	Climate Change	Ocean warming and ocean acidification parameters			SDG 14.3.1
15.1	4	Climate Change	Sea surface temperature		Core	SDG 13.1
15.2	11	Climate Change	SDG 14.3.1: Average marine acidity (pH) measured at agreed suite of representative sampling stations	TIER I	Core	SDG 14.3.1

15.3	NEW	Climate Change	Salinity		Complementary	
15.4	NEW	Climate Change	Sea-level rise		Complementary	SDG 13.1
15.5	NEW	Climate Change	Precipitation		Complementary	SDG 13.1
15.6	NEW	Climate Change	Hydrographic changes	TIER IV	Complementary	
16	19	Climate Change	Number of national and local actions and targeted measures to support climate change adaptation, including nature-based solutions, developed and implemented.	TIER III	Core	SDG 13.2
Cross cutting						
17	22	Cross-cutting	Number of Countries using integrated management approaches for marine and coastal areas.		Core	SDG 14.2.1 GBF Target 1
18	8	Cross-cutting	Extent of coastal modification and km2 of coastal reclamation.		Complementary	SDG 14.2
19	NEW	Cross-cutting	Services provided by marine and coastal ecosystems, including (human health and wellbeing).		Complementary	GBF Target 9, SDG 3
20	NEW	Cross-cutting	Status of the transition to a sustainable Blue Economy.		Complementary	SDG 8.4 / SDG 14.7
21	NEW	Cross-cutting	Capacity building: Number of joint strategies, guidelines and actions on quality status assessments, monitoring programmes and knowledge management to address environmental challenges in a coordinated effort and disseminated to relevant stakeholders.		Core	GBF Target 21, SDG 17.6 / 17.18
22	NEW	Cross-cutting	Knowledge management and data sharing: Number of knowledge management platforms actively sharing data, tools, or assessments through global knowledge management platforms including cross-RS integration efforts.		Core	GBF Target 21, SDG 17.16 / 17.18

Table_2_Regional Seas Indicator Framework 2.0 Technical Sheet

VI. Annex 1_REGIONAL SEAS INDICATOR FRAMEWORK 2.0 ARCHITECTURE

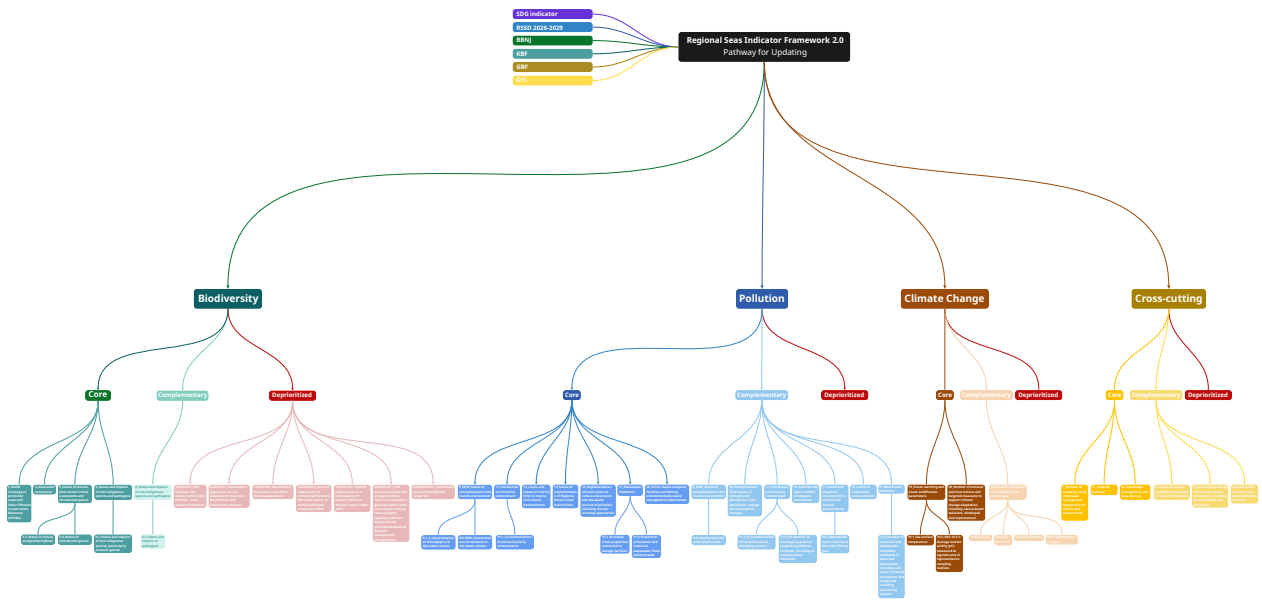

Table 3_Regional Seas Indicator Framework 2.0 Architecture