CLME+ Project
Caribbean & North Brazil Shelf Large Marine Ecosystems

2nd BLUE ECONOMY FORUM
EAS CONGRESS 2018 – Iloilo, Philippines

# Towards a thriving, sustainable BLUE ECONOMY in the Wider Caribbean

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*Catalyzing implementation of the 10-year Strategic Action Programme for the Caribbean and North Brazil Shelf LME's (2015-2025)*

# *THE CLME+ VISION:*

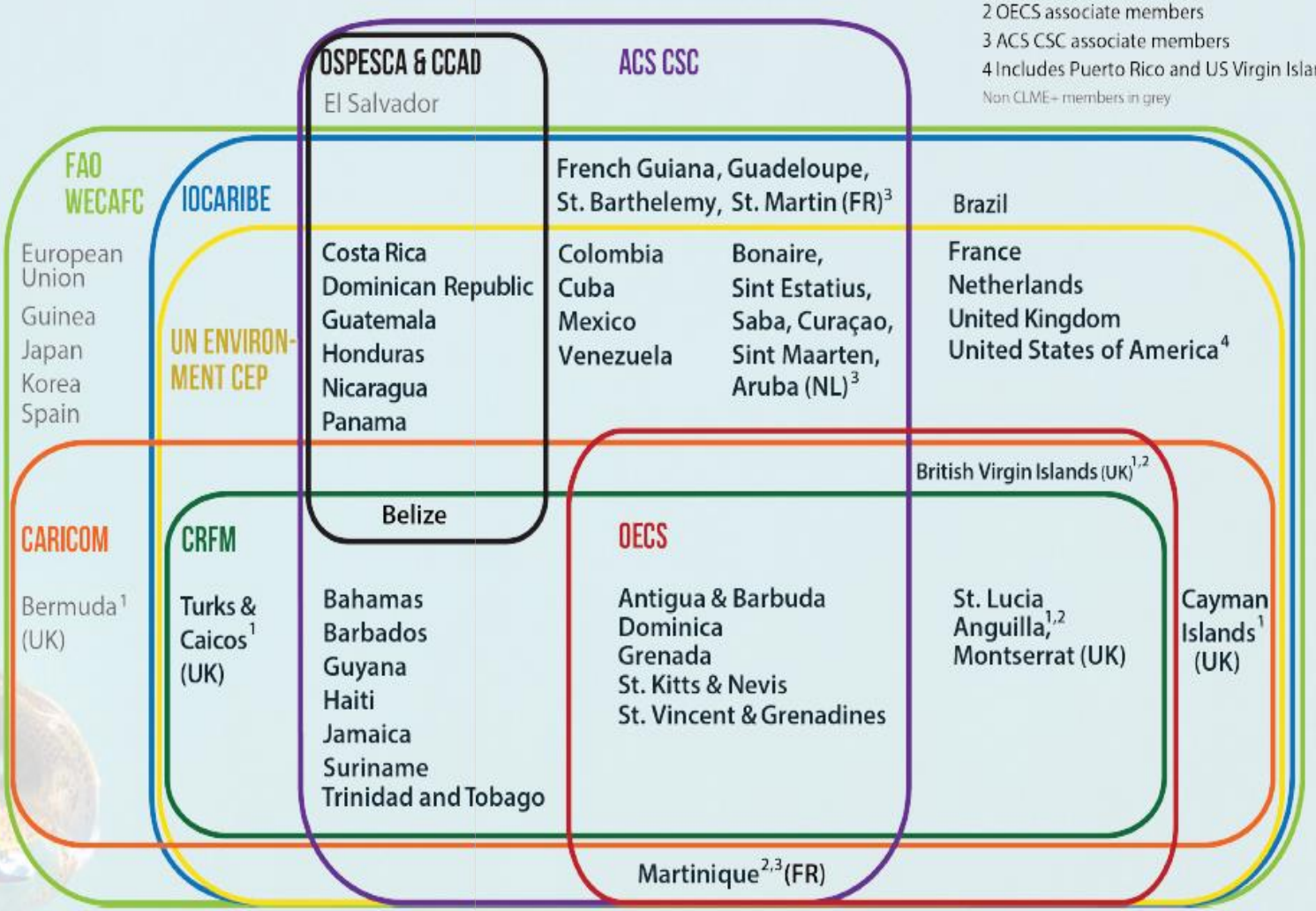
## A HEALTHY MARINE ENVIRONMENT THAT SUPPORTS THE WELL-BEING AND LIVELIHOODS OF THE PEOPLES OF THE REGION


## Supporting a blue economy

- The goods and services provided by the region's marine ecosystems underpin a blue economy, supporting livelihoods, human well-being, and sustained socioeconomic development.
- Nearly 1 million persons are directly employed in marine capture fisheries, with another 3 million jobs in ancillary activities.
- Indicative annual gross revenue from fisheries and aquaculture in the Caribbean estimated at about US$5 billion in 2012.
- Caribbean coral reefs generate about US$4 billion in income to the region each year (shoreline protection, fish nurseries and habitat, tourism activities).
- Gross revenue from tourism and recreation was estimated at US$47 billion in 2012.
- The region is also important for shipping and is a major producer of oil and gas.

# The Wider Caribbean / CLME+ region:

COUNTRY MEMBERSHIP IN IGOs



# MAJOR THREATS TO THE CLME+ REGION

## UNSUSTAINABLE FISHING

Total fishery catch by CLME countries in FAO Area 31 has reduced from about 1.79m tonnes (1990s) to 1.25m tonnes (2010). In the NBSLME, around 30% of the fish stocks are overexploited or have collapsed as a result of overfishing.

## ECOSYSTEM DEGRADATION

Live coral cover has already declined by as much as 80% in many areas of Caribbean reefs over the last two decades. Mangrove areas in the region have declined by 1% per year since 1980.

## MARINE POLLUTION

Up to 80% of sewage reaches the Caribbean Sea untreated or only partially treated. Ships in the Caribbean are estimated to produce more than 70,000 tonnes of waste water per year.

## CLIMATE CHANGE

Increasing sea temperature, sea level rise and more frequent extreme weather events are already felt across the region, with severe consequences on environmental health and human well-being.

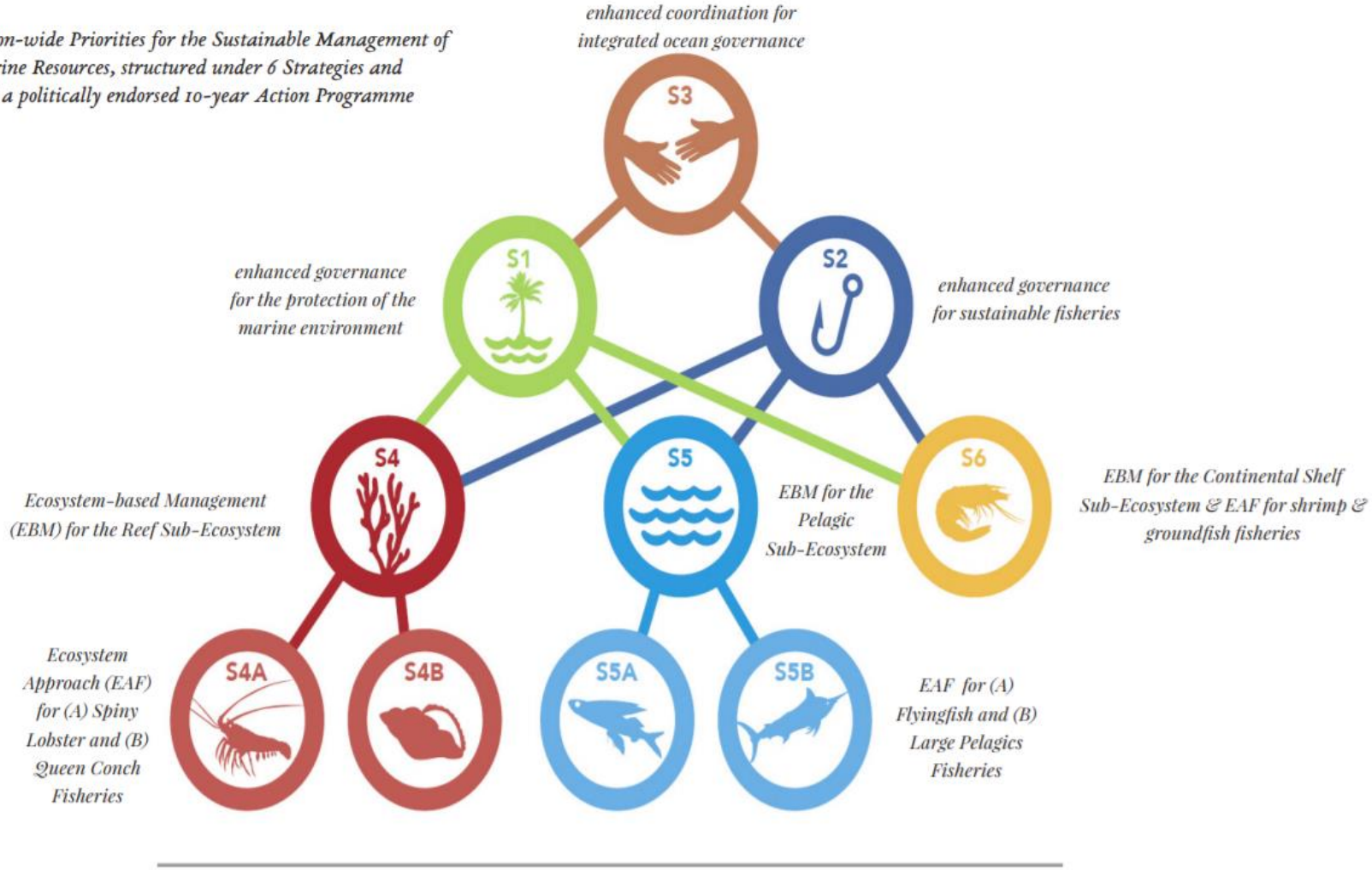
# 10-year CLME+ Strategic Action Programme (2015-25)

*signed (to date) by 35 Ministers,*

*representing 25 countries*

*and 6 Overseas Territories*

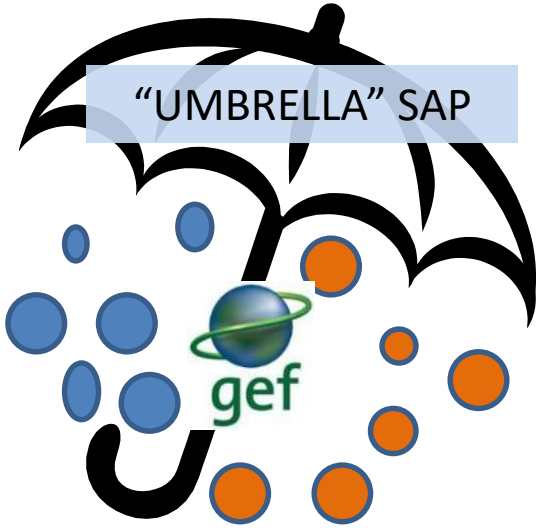
*The CLME+ SAP: Region-wide Priorities for the Sustainable Management of shared Living Marine Resources, structured under 6 Strategies and 4 Sub-Strategies in a politically endorsed 10-year Action Programme*




*The SAP structures 76 priority actions to safeguard the marine environment under 3 region-wide Strategies (S1-S2-S3), 3 Strategies at the Sub-Ecosystem level (S4-S5-S6), and 4 additional Sub-Strategies dealing with fisheries deemed of strategic importance to the region.*

# The CLME+ SAP = an umbrella programme

*Comprehensive road-map towards sustainable living marine resources management*




**REQUIRES CO-OPERATION & COORDINATION → GLOBAL CLME+ PARTNERSHIP/ALLIANCE**

Existing Projects, Initiatives

New Projects, Initiatives

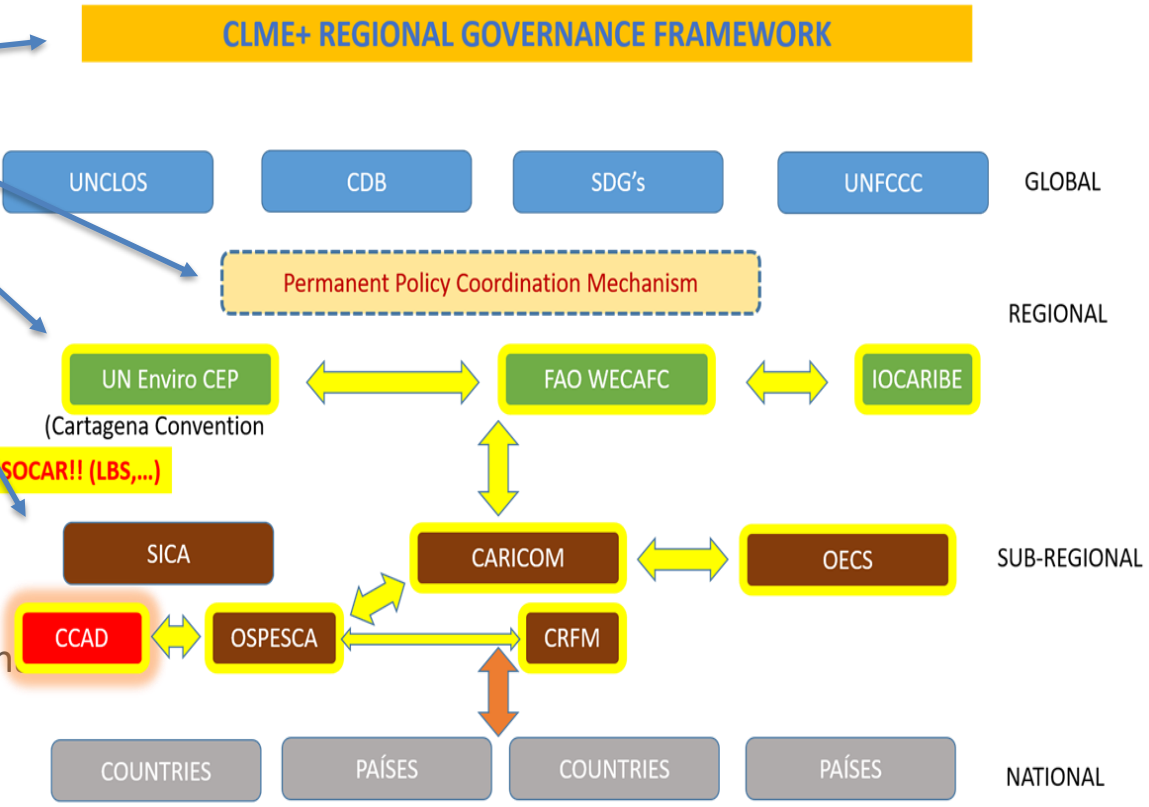
gef

# Consolidating the multi-level Regional Framework for Ocean Governance (incl. Sustainable Financing)

**CLME+ PROJECT CONSULTANCY**

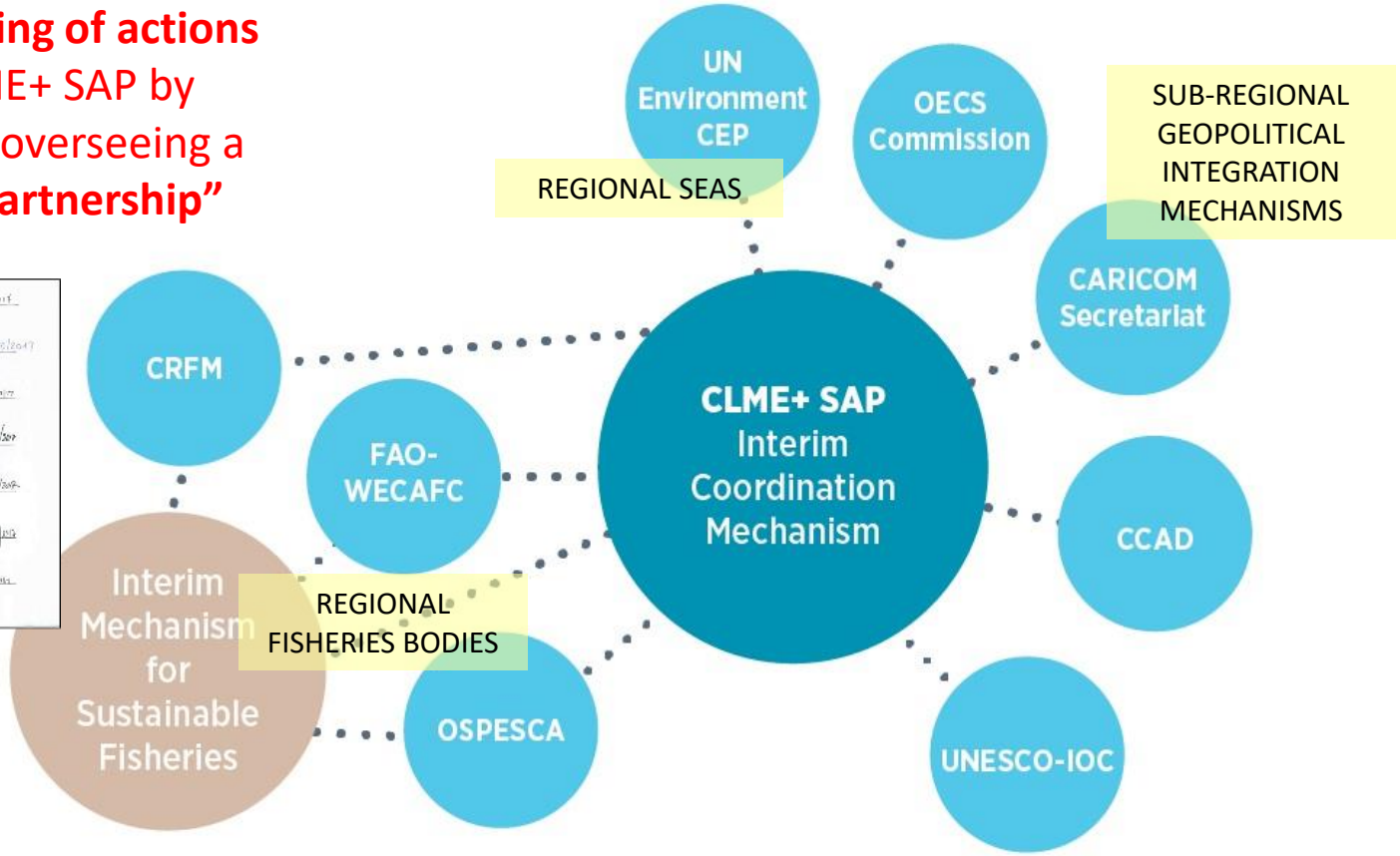
**Institutionalizing SOMEE**

- Assign responsibilities
- Formalize mandates
- Develop Sustainable Financing Mech
- Consolidate online platforms



# CLME+ SAP INTERIM COORDINATION MECHANISM (ICM)

- ✓ Enhance regional **coordination** and **collaboration**, support **oversight** and **integration of actions** for **sustainable fisheries** and the **protection** and sustainable use of the **marine environment**
- ✓ Promote **up-scaling of actions** towards the CLME+ SAP by establishing and overseeing a **global "CLME+ Partnership"**

# INTERACTIVE GOVERNANCE:

**The whole of interactions among governments, civil society and private sector to:**

- *resolve societal problems*
- *make use of societal opportunities*

→ **e.g. C-SAP, and Small Grants Coordination Mechanism (CANARI)**

*BLUE ECONOMY??*

*REBRAND!*

# The Global Partnership for the Protection, Sustainable Management and Use of the Caribbean and North Brazil Shelf LME's


An incipient coalition
bringing together Governments,
Inter-Governmental Organizations,
non-Governmental Organizations,
Private Sector,
Multi-lateral Banks and
Development Organizations,
…

**FIRST CLME+ PARTNERSHIP FORUM: JULY 2019**

***PEMSEA INVITED!***

*Catalyzing implementation of the 10-year Strategic Action Programme for the Caribbean and North Brazil Shelf LME's*

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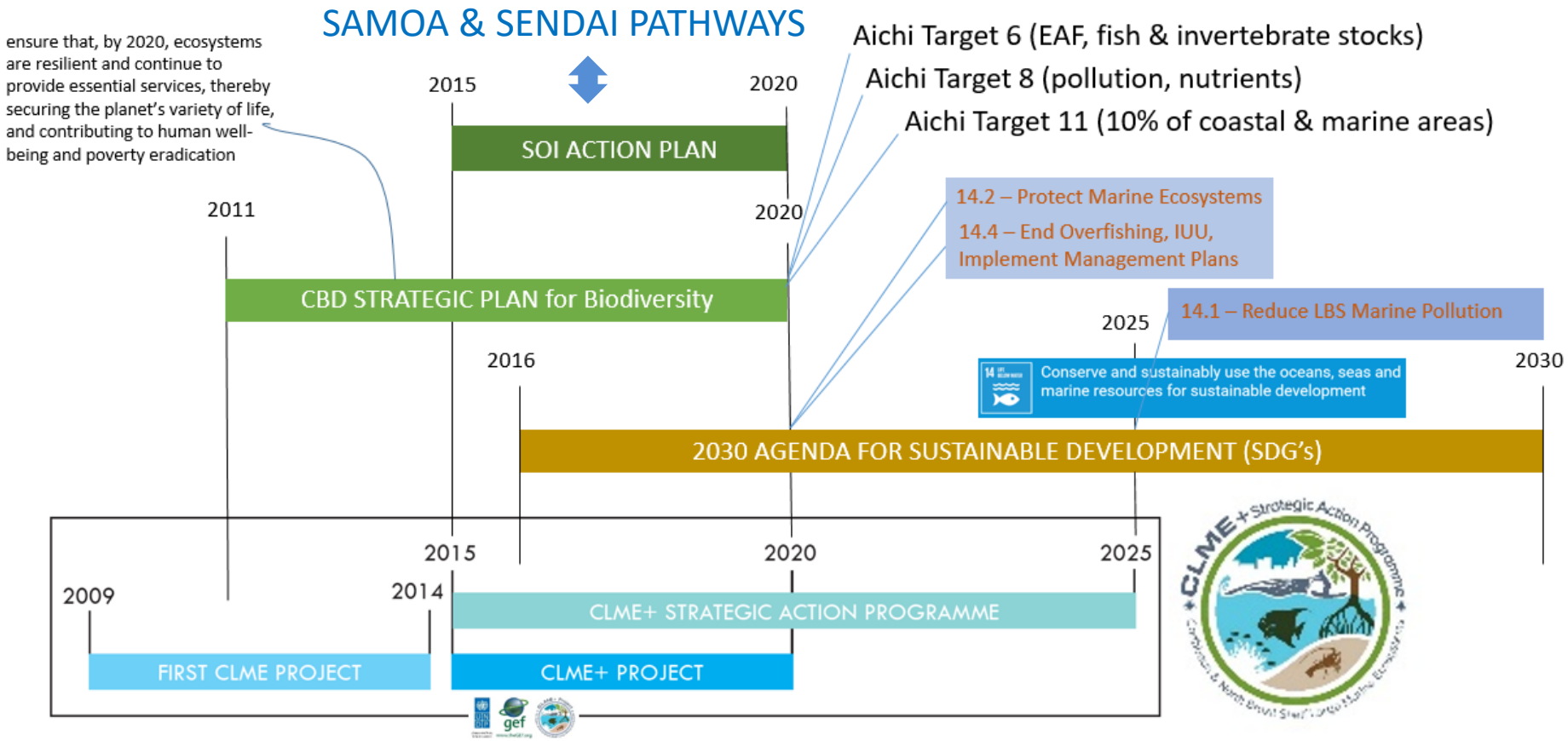
CLME+ Project

# Timeline of Regional and Global Processes towards Sustainable Oceans




*Catalyzing implementation of the 10-year Strategic Action Programme for the Caribbean and North Brazil Shelf LME's*

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An Information Booklet

# State of the Marine Environment and associated Economies

# CLME+ SOMEE

## in the Wider Caribbean

**... a collaborative, integrated long-term reporting mechanism**

*The CLME+ SOMEE is being collaboratively developed by Inter-Governmental Organizations with a mandate on the marine environment in the Wider Caribbean, with the support of the UNDP/GEF CLME+ Project (2015-2020): "Catalyzing the implementation of the Strategic Action Programme for the Sustainable Management of shared Living Marine Resources of the Caribbean and North Brazil Shelf Large Marine Ecosystems"*

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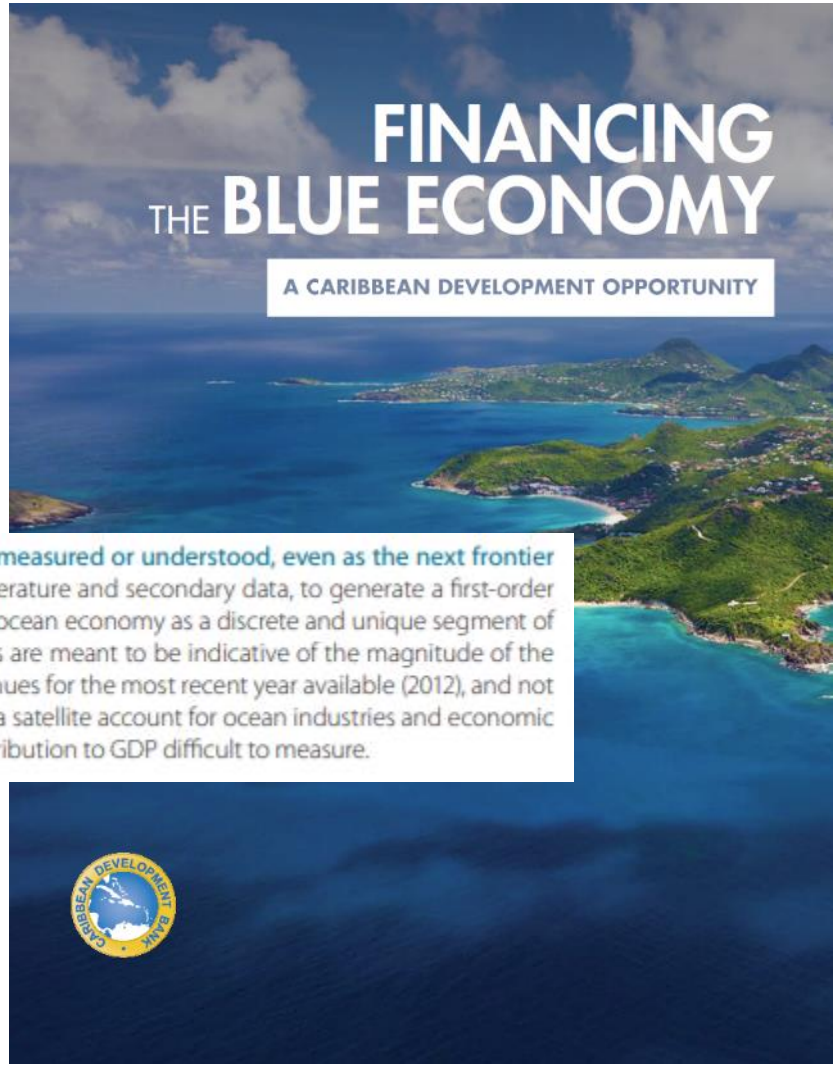
*Catalyzing implementation of the 10-year Strategic Action Programme for the Caribbean and North Brazil Shelf LME's*

www.theGEF.org


**Surprisingly, the region's ocean economy is not well measured or understood, even as the next frontier for growth.** This report includes a review of existing literature and secondary data, to generate a first-order estimate of the size and composition of the Caribbean ocean economy as a discrete and unique segment of the region's overall economy. However, these estimates are meant to be indicative of the magnitude of the ocean economy, capturing only measurable gross revenues for the most recent year available (2012), and not actually value added. In many accounting frameworks, a satellite account for ocean industries and economic sectors is not maintained, making estimates of the contribution to GDP difficult to measure.

WORLD BANK GROUP



REPORT NO: AUS16344
SEPTEMBER 2016

*Catalyzing implementation of the 10-year Strategic Action Programme for the Caribbean and North Brazil Shelf LME's*

UNDP Empowered lives. Resilient nations.

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CLME+ Project

# 1 The Growing Ocean Economy

**Table 1.4. The Caribbean Ocean Economy in Perspective**

| | EST. GROSS REVENUES IN 2012 (US$ M) | AS A % OF TOTAL GDP IN 2012 | AS A % OF VALUE ADDED FROM GLOBAL OCEAN ECONOMY IN 2010*** |
|---|---|---|---|
| Caribbean Ocean Economy | 407,000 | 17.7* | 27 |
| Caribbean Island States and Territories Ocean Economy | 53,000 | 18.4** | 4 |

**Caribbean GDP of US$2.3 trillion, does not include territories (source: World Bank, 2016)*
***Caribbean Island States GDP of $287.8 billion, does not include territories (source: World Bank, 2016)*
****Value added from global ocean economy in 2010 of $1.5 trillion (Source: OECD, 2016)*

8 https://www.cia.gov/library/publications/the-world-factbook/fields/2012.html#av.

FIGURE 1: ESTABLISHED AND EMERGING BLUE ECONOMY INDUSTRIES

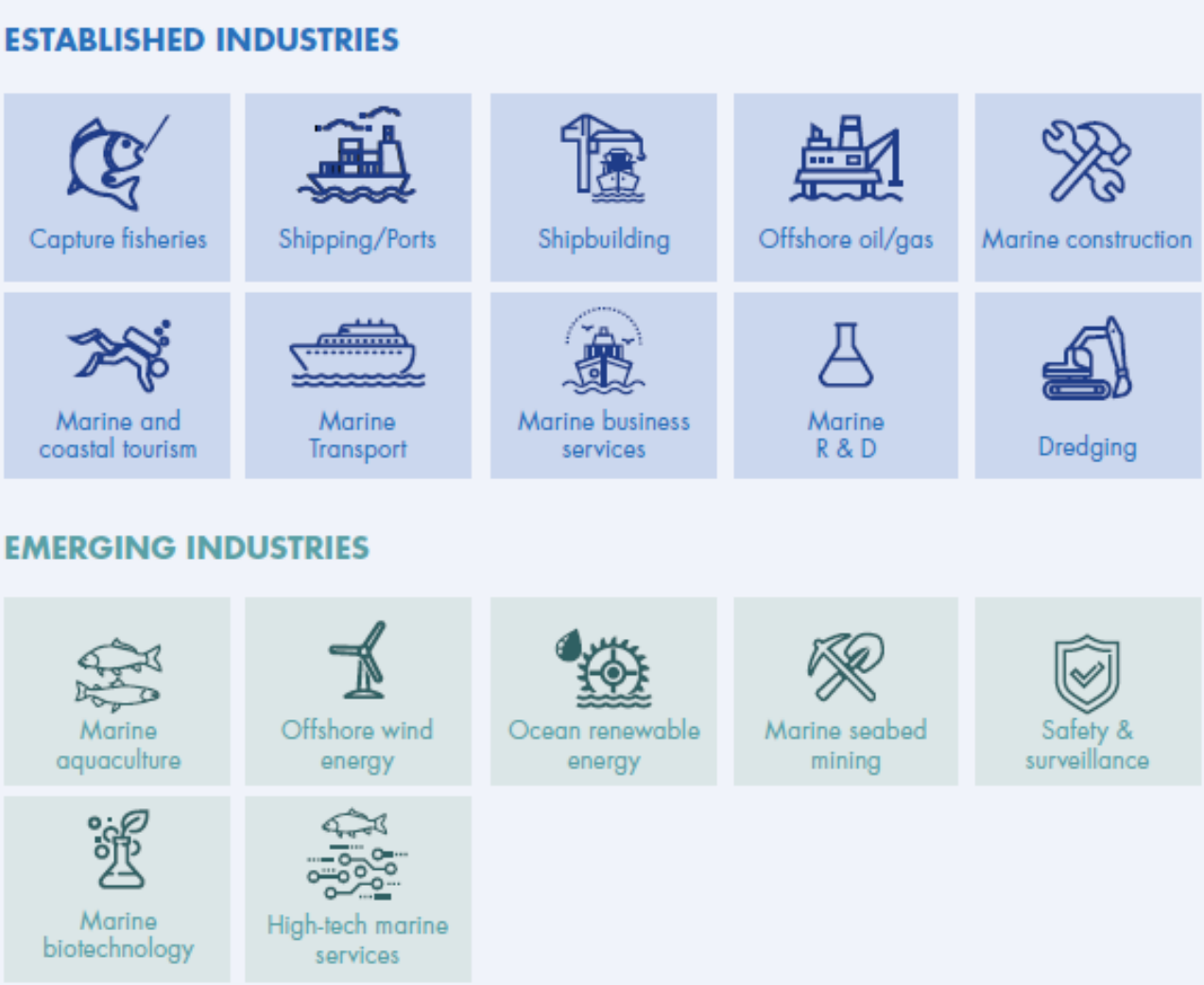

**Table 1.3.** The Ocean Economy of the Caribbean in 2012: A Snapshot

| TYPE OF ACTIVITY | OCEAN SERVICE | ECONOMIC SECTOR/ INDUSTRY | INDICATIVE ANNUAL GROSS REVENUES (US$, BILLIONS IN 2012 U.S. DOLLARS) | | | NOTES/METHODS |
|---|---|---|---|---|---|---|
| | | | ISLAND STATES AND TERRITORIES | MAINLAND COUNTRIES | TOTAL | |
| Harvesting of living resources | Seafood | Fisheries | 0.37 | 4.62 | 4.99 | Estimated based on catch data from Food and Agriculture Organization (FAO) FishStatJ (FAO 2016a), and value per metric ton from Sumaila et al. (2007) and Swartz et al. (2012). |
| | | Aquaculture | 0.04 | 1.86 | 1.90 | Value produced retrieved from FAO FishStatJ (FAO 2016a) |
| | Marine biotechnology | Pharma-ceuticals, chemicals, and so on | n.a. | n.a. | n.a. | Data not available to estimate the size of the Caribbean marine biotechnology sector, though a number of drugs (for example, Ara-A, AZT, Ara-C) have been developed in the past from Caribbean coral reefs (Bruckner 2002). |
| Extraction of nonliving resources, generation of new resources | Minerals, sand, and gravel | Seabed mining | n.a. | n.a.w | n.a. | Data not available to indicate seabed mining occurring currently in the Caribbean Sea. |
| | Energy | Oil and gas | 5.64 | 34.25 | 39.89 | Only offshore oil and gas included. Trinidad and Tobago is the leading producer among Island States and Territories, generating roughly 66% of offshore oil production in island waters (Cuba produces another 29%) (EIA 2015) and 98% of natural gas (EIA 2016). Both natural gas and oil exploration activities have continued at a fast pace in Trinidad and Tobago over the early 2000s (GENI 2003), and in Colombia (PwC 2014) and Venezuela, RB (ENI 2015) more recently. |
| | | Renewables (marine) | n.a | n.a. | n.a | Data not available to disaggregate marine renewables from total renewables, which generated some US$1.3 billion in revenues in 2012 according to the U.S. Energy Information Administration (EIA) (EIA 2016). For total renewables (terrestrial and marine), EIA estimates the Islands States and Territories produced an estimated 3.66 billion kWh renewable electricity in 2012 (EIA 2015). For example, Bonaire currently generates some 90% of total energy from wind (12 turbines with a total 11 MW capacity) (RMI 2015). To supplement wind-based generation in times of low wind, the island also has 14 MW of diesel generation, designed to be able to run on locally grown algae-based biodiesel (Pei 2010; RMI 2015). |

*Note: * Average of estimated value over the time period from 2000 to 2050 has not been adjusted to 2012 U.S. dollar.*

**Table 1.3.** The Ocean Economy of the Caribbean in 2012: A Snapshot

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|---|---|---|---|---|---|---|
| | | | ISLAND STATES AND TERRITORIES | MAINLAND COUNTRIES | TOTAL | |
| Extraction of nonliving resources, generation of new resources | Freshwater | Desalination | n.a | n.a | 0.23 | The regional Caribbean Desalination Association has been active in promoting the growth of the industry (CaribDA 2016), and the 2012 value of production reported at US$0.53 per m3 (US$2 per 1,000 gallons) for a total of approximately US$230 million (EPA 2016). |
| Commerce, tourism, and trade | Transport and trade | Shipping | n.a | n.a | 311.32 | In the container shipping industry, US$311.32 represents the value of the total 'twenty foot equivalent units' (TEUs) assumed to be shipped through the region (8.2% (Rodrigue and Ashar 2015) of 2012 global container shipping volume of 155 million (UNCTAD 2012)), assuming a value of US$24,494 per TEU (Olivier and Slack 2007). |
| | | Port infrastructure and services | n.a | n.a | n.a | Revenues available for specific ports only, not systematically. Kingston, Jamaica; Port of Spain, Trinidad and Tobago; and Freeport, Bahamas are the region's largest ports with regard to volume (TEUs) (CEPAL 2009). For example, the Port of Kingston reports annual revenues of US$109 million in 2011 (JMS 2013). Additionally a new transshipment port has been under construction since 2012 in La Brea, South Trinidad (InvesTT 2012; Caribbean Maritime 2014), and in 2014 The Bahamas announced a US$250 million project to expand the container port in Freeport (The Government of The Bahamas 2014). |
| | Tourism and recreation | Tourism | 47.1 | n.a | 47.10 | Total marine and coastal tourism revenues for Island States and Territories (WTTC 2015), though revenues are not available for coastal tourism in mainland countries. Tourism in the Island States and Territories projected to increase to over US$70 billion per year by 2024 (WTTC 2014). |
| | | Coastal development | n.a | n.a | n.a | Data not available |

*Note: * Average of estimated value over the time period from 2000 to 2050 has not been adjusted to 2012 U.S. dollar.*

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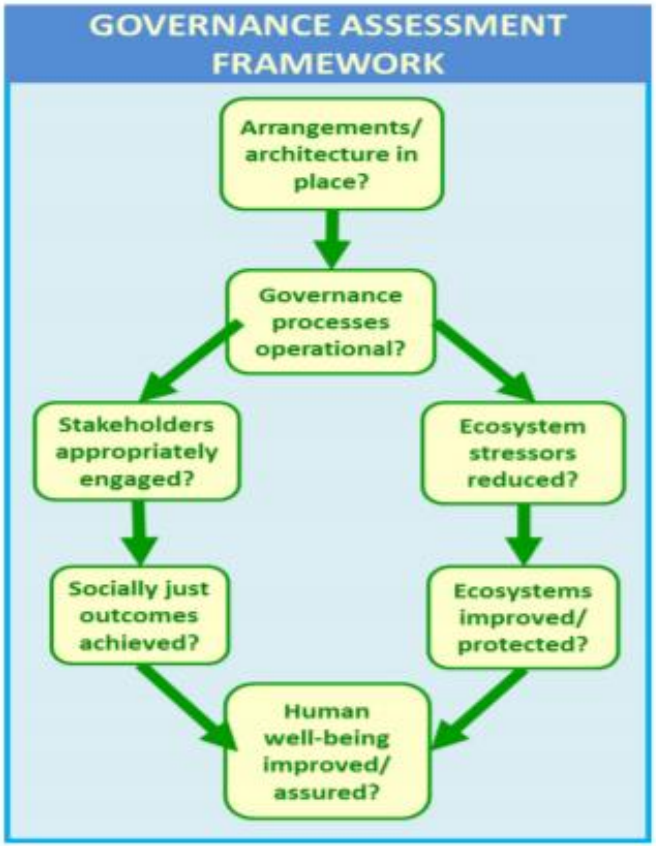
|---|---|---|---|---|---|---|
| | | | ISLAND STATES AND TERRITORIES | MAINLAND COUNTRIES | TOTAL | |
| Indirect contribution to economic activities and environments | Carbon sequestration | Blue carbon (that is, coastal vegetated habitats) | 0.02 | 0.07 | 0.09 | Assumed that the mangrove loss rates remain constant at 0.08% per year; r = 6%; carbon price US$5 per tCO2e. Total mangrove coverage used as baseline, for Island States and Territories was 2,417 km2, (10,305 for mainland countries) for a regional total of 12,722 km2 (Hamilton and Casey 2016). Assumed carbon storage of 200 (biomass) and 400 Mg C per ha (top meter of soil) (Bhomia et al. 2016), where carbon is emitted with a half-life of 10 years (Pendleton et al. 2012). At the current estimated social cost of carbon (US$40 per tCO2e), this value becomes US$704 million per year. |
| | Coastal protection | Habitat protection, restoration | n.a | n.a | 1.47* | Protection value of Caribbean coral reefs, estimated by World Resources Institute in 2004 (Burke and Maidens 2004). |
| | Waste disposal for land-based industry | Assimilation of nutrients, solid waste | n.a | n.a | n.a | Data not available |
| | Existence of biodiversity | Protection of species, habitats | n.a | n.a | n.a | Data not available for any payments to protect Caribbean Sea biodiversity, nor global willingness-to-pay |
| TOTAL | | | 53.17 | | 406.99 | These totals are likely conservative and underestimated, given that many ocean sectors have not been measured, or disaggregated at the level of the islands. |

*Note: * Average of estimated value over the time period from 2000 to 2050 has not been adjusted to 2012 U.S. dollar.*



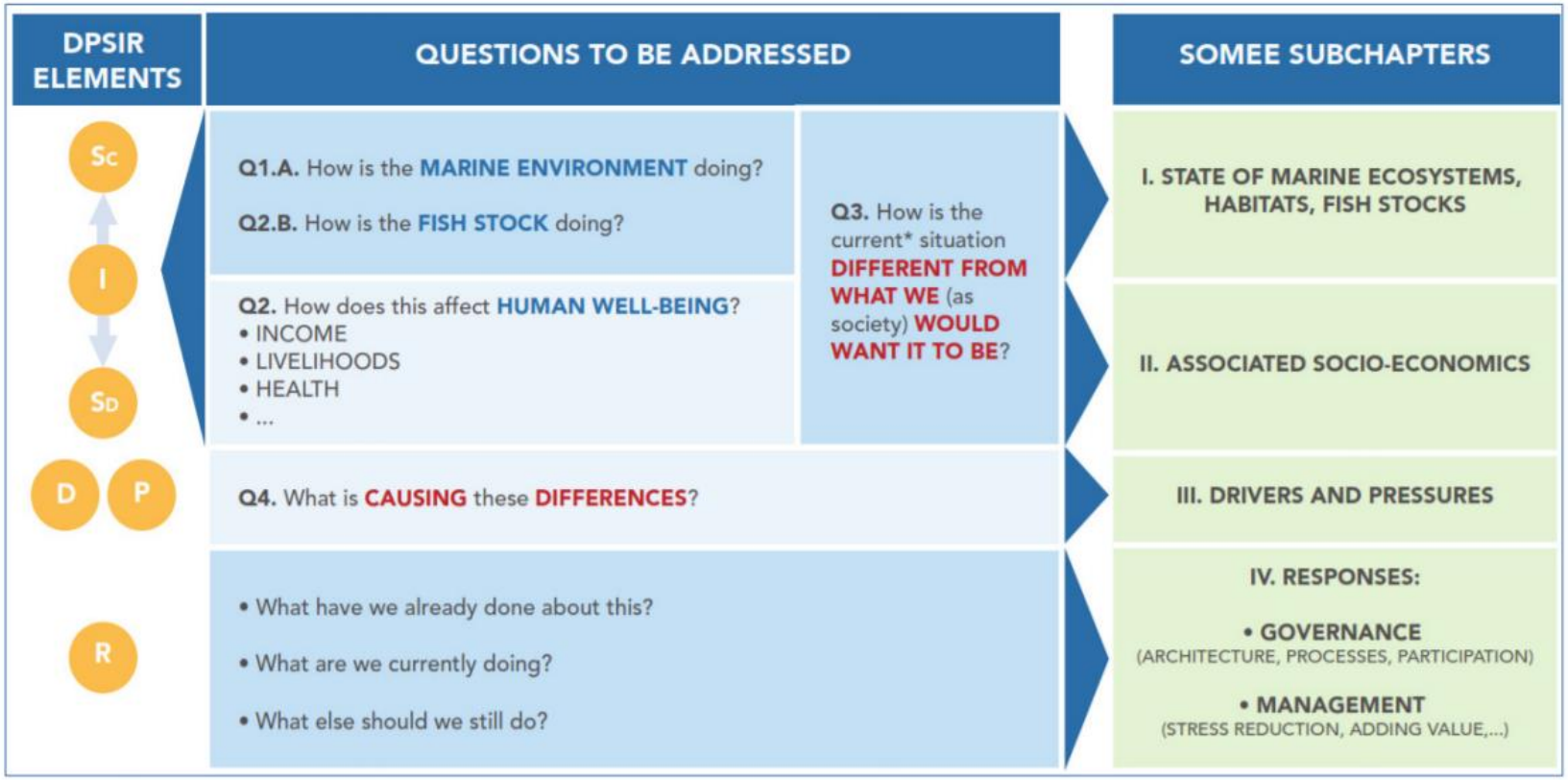

*The Governance Effectiveness Assessment Framework (Fanning and Mahon) clearly highlights as our "ultimate" goal: improved human well-being. It recognizes however that to achieve such, enhancing the arrangements and processes for marine resources governance will be required*

# SOMEE REPORT - PRELIMINARY OUTLINE
INCLUDING LINKAGES WITH THE CLME+ SAP STRATEGIES

**CHAPTER 1**
Introduction
- 1.1 Global importance of the oceans
- 1.2 Regional approaches to ocean governance
- 1.3 The CLME+ region
- 1.4 Towards a blue economy for the CLME+ region
- 1.5 Regional Governance Framework
- 1.6 The 10-year CLME+ SAP
- 1.7 CLME+ SOMEE: purpose, mandate and approach

**CHAPTER 2**
General state of the marine environment & associated economies
- 2.1 State of the LMEs and their associated living resources
- 2.2 Associated socioeconomics
- 2.3 Drivers and pressures
- 2.4 Responses
  - 2.4.1 Region-wide governance arrangements and processes for the protection of the marine environment
  - 2.4.2 Region-wide governance arrangements and processes for Sustainable Fisheries
  - 2.4.3 Region-wide arrangements and processes for Integrated Ocean Governance

# THE SOMEE "STORY": A QUESTIONS-BASED ASSESSMENT APPROACH




SOMEE will use a "STORY TELLING APPROACH", building on the "DPSIR" Driver (D) - Pressure (P) - Status (S) - Impact (I) - Response (R) Analytical Framework to explore current, past and possible future conditions of marine habitats, biodiversity and fish stocks, what this means for human well-being and our economies, why current (or future) conditions may be different from what we desire and from the targets we set for ourselves as societies. SOMEE will then continue to explore the reasons for these differences, as well as what has, is, and can be done to progressively close the gap between current conditions and our societal aspirations. The structure of the SOMEE chapters will be based on the DPSIR Framework and the SAP Strategies *(see next page)*.

# THANK YOU

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