

# **Multi-Level, Nested Approach to Shared Living Marine Resources Governance in the Caribbean and North Brazil Shelf Large Marine Ecosystems and Associated Governance Effectiveness Assessment Framework**

**Los Recursos Marinos Vivos Compartidos en los Grandes Ecosistemas Marinos del Caribe y de la Plataforma Continental del Norte de Brasil: Arreglos Anidados y de Múltiples Niveles Para su Gobernanza, y Marco Conceptual para la Evaluación de su Eficacia**

**Arrangements Imbriqués et à Plusieurs Niveaux pour la Gouvernance des Ressources Marines Vivantes Partagées dans les Grands Ecosystèmes Marins de la Mer des Caraïbes et du Plateau Continental du Nord du Brésil, et Cadre Associé pour l'Evaluation de l'Efficacité de la Gouvernance**

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## **ABSTRACT**

The Large Marine Ecosystem (LME) concept, developed by the US National Oceanic and Atmospheric Administration (NOAA), defines a meaningful geospatial unit for the implementation of an ecosystem-based management (EBM) approach. Since 1995, the Global Environment Facility (GEF) has provided financial support to cover the initial incremental costs of enhancing the transboundary collaboration required to adopt this approach in the Caribbean and North Brazil Shelf LMEs. Scientific and technical fact-finding through the Transboundary Diagnostic Analyses conducted under the GEF/UNDP “CLME Project” pointed to weaknesses in governance arrangements as the over-arching root cause for priority problems such as pollution, habitat degradation and unsustainable fisheries. A 10-year Strategic Action Programme for sustainable shared living marine resources management, the “CLME+ SAP”, was consequently developed in 2013 and politically endorsed at the regional level. The SAP has been shaped on a proposal for a multi-level, nested Regional Governance Framework. Renewed financial support from the GEF will see the implementation of the SAP becoming catalyzed through the follow-up “CLME+ Project” (2015 - 2019). The comprehensive Governance Effectiveness Assessment Framework ties governance processes to expected ecological and social outcomes, and has been adopted as a reference framework for the design of four demonstration sub-projects that will foster the implementation of the ecosystem approach to fisheries (EAF) and ecosystem-based management (EBM) in the region.

KEY WORDS: Large Marine Ecosystems (LMEs), governance, CLME+, Strategic Action Programme (SAP)

## **INTRODUCTION**

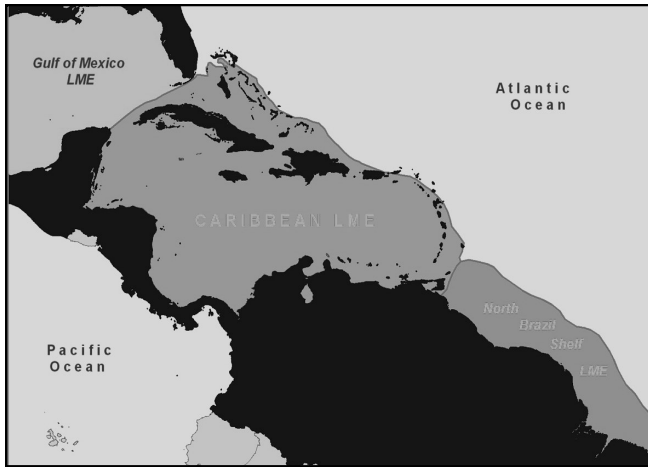
The Large Marine Ecosystem (LME) concept was developed by the US National Oceanic and Atmospheric Administration (NOAA). LMEs are characterized by distinct bathymetry, hydrography, productivity, and trophically dependent populations of marine species (Sherman 1991). An LME will typically cover a relatively large area of the world's oceans, encompassing coastal areas from river basins and estuaries to the seaward boundaries of continental shelves and the outer margins of the major ocean current systems, and/or occupying semi-enclosed seas (Duda and Sherman 2002). Globally, 66 different LMEs have been defined.

In 2005, LMEs were recognized in a scientific consensus statement by over 200 marine scientists, academics and policy experts as important global areas for practicing ecosystem-based research, assessment and management of ocean goods and services (Sherman et al. 2009). Due to the trans-boundary nature of many LMEs, their adoption as an assessment and management unit will generally require inter-national coordination and collaboration.

In recognition of this need, since 1995, the Global Environment Facility (GEF) has been financially supporting enhanced transboundary coordination and collaboration in LMEs. Between 2009 and 2014, the adoption of the LME concept by the countries that share the Caribbean Sea and adjacent areas was supported through the UNDP/GEF “CLME Project” (Caribbean and North Brazil Shelf LMEs). In this context, the combined area of the Caribbean LME (CLME) and North Brazil Shelf LME (NBSLME) is now further being referred to using the acronym “CLME+” (Figure 1).

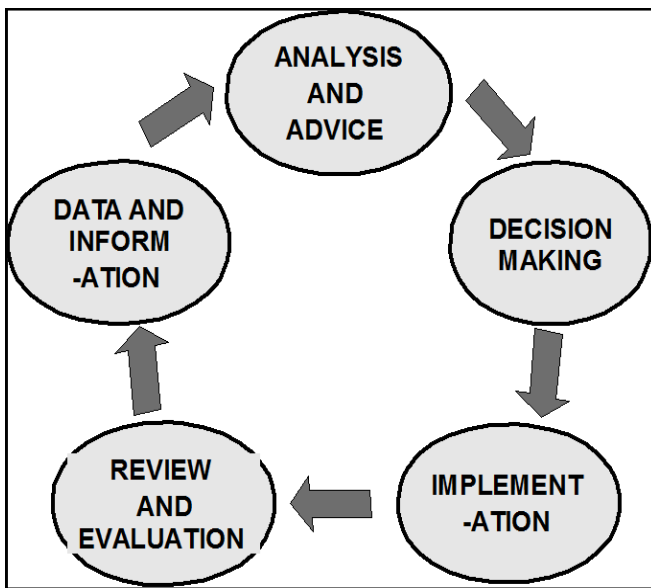
## **METHODS**

The collaborative, participatory development and subsequent wide-ranging political endorsement of a 10-year *Strategic Action Programme for the Sustainable Management of Shared Living Marine Resources of the Caribbean and North Brazil Shelf LMEs* (the CLME+ SAP) was based on the results from scientific and technical fact finding through the Transboundary Diagnostic Analysis (TDA) approach, promoted by the Global Environment Facility (GEF). Causal Chain Analyses (CCA) conducted under these TDAs highlighted the gaps and weaknesses in the existing governance arrangements for shared living marine resources as the over-arching root cause for the three key transboundary problems affecting these LMEs:



**Figure 1.** The Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME<sup>+</sup>)

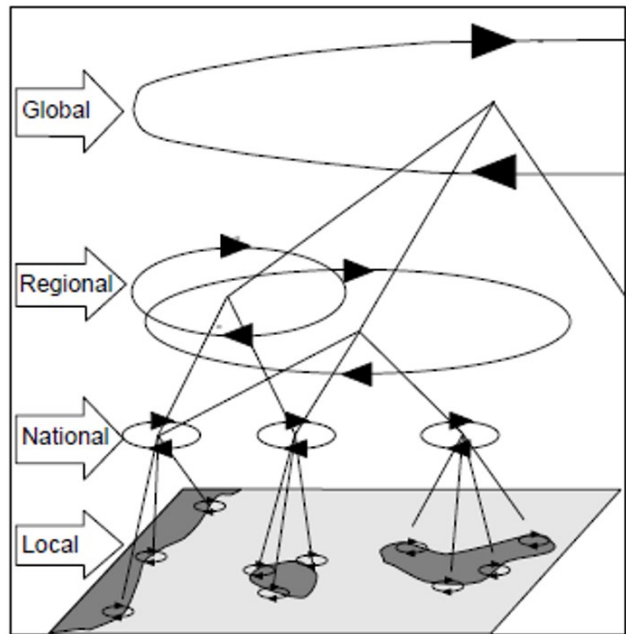
pollution, habitat degradation and unsustainable fisheries. In addition to the TDAs and associated CCAs, case studies were conducted under the CLME Project. Resulting from these case studies, a technical proposal was made for a multi-level, nested *Regional Governance Framework* (RGF) for shared living marine resources management (Mahon et al. 2013). The politically endorsed CLME<sup>+</sup> SAP has been largely shaped on this technical proposal. The analysis of institutional, capacity and operational gaps that currently jeopardize full policy cycle implementation (Figure 2) across thematic areas and at different spatial scales was central in the development of the RGF proposal as well as for the subsequent identification of priority actions under the CLME<sup>+</sup> SAP.



**Figure 2.** The 5 components of a policy cycle (from: Mahon et al. 2013)

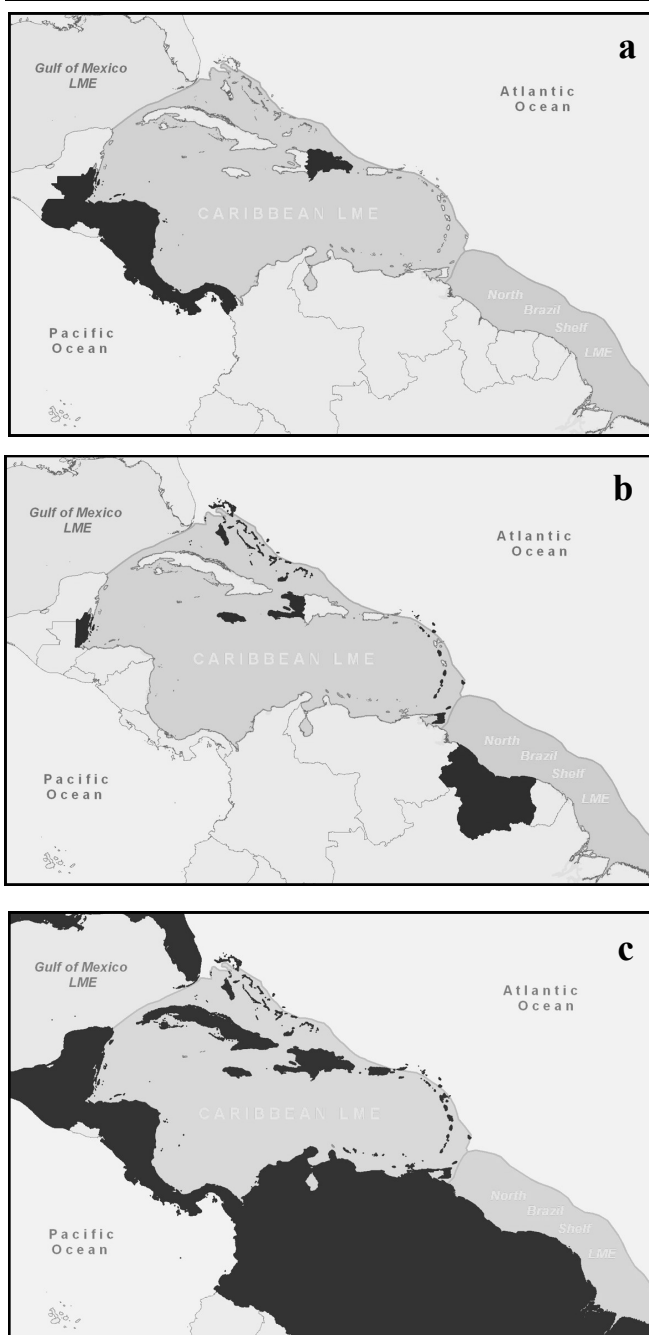
**RESULTS & DISCUSSION**

A conceptual representation of the proposed multi-level, nested approach to shared living marine resources governance is given in Figures 3 and 4. Circles in Figure 3 represent full policy cycle runs. Vertical lines reflect the required coherence, complementarity and interactions (integration and *nestedness*) between policies and their implementation, across a range of spatial scales, from the local to the national to the sub-regional and regional (LME) levels, and finally, global-level ocean policies (and vice versa).



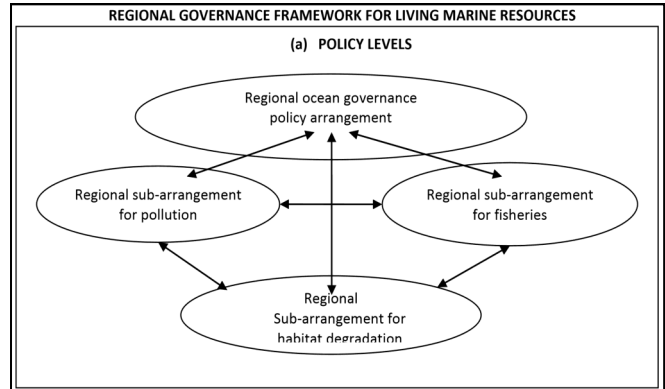
**Figure 3.** The multi-level, nested Regional Governance Framework for the CLME<sup>+</sup> (from: Mahon et al. 2013)

In the context of the CLME<sup>+</sup>, such multi-level framework acquires special relevance, given the fact that to date, a multitude of regional and sub-regional governance bodies covering part of the matters and geographic scope relating to LME-level shared living marine resources management already exist. Reference can be made in this context to, for example, the Caribbean Environment Programme (UNEP-CEP), the Western Central Atlantic Fisheries Commission (WECAFC-FAO), and the sub-regional integration mechanisms such as the Central American Integration System (SICA), the Caribbean Community (CARICOM) and the Organization of Eastern Caribbean States (OECS), and associated subsidiary bodies such as the Central American Organization of the Fisheries and Aquaculture Sector (OSPESCA) and the Caribbean Regional Fisheries Mechanism (CRFM). Taking the particular case of transboundary fisheries resources governance, however, it can easily be seen from the data represented in Figure 4 how current arrangements represent gaps that still hamper efficient, effective implementation of the ecosystem approach.



**Figure 4.** Geographic scope and current mandates of the 3 regional fisheries bodies (RFBs) in the CLME<sup>+</sup>: (a) OSPESCA; (b) CRFM; (c) WECAFC. Note how currently none of these RFBs have a mandate that covers both the full region and the full policy cycle.

Besides the need for improved arrangements that will allow for enhanced spatial integration, thematic integration (e.g among the arrangements for fisheries management and those for environmental protection) will be equally important to facilitate full adoption of an Ecosystem-Based Management (EBM) approach (Figure 5).



**Figure 5.** Inter-linked, thematic & integrated governance arrangements (CERMES technical proposal; see Mahon et al. 2013).

Due consideration further needs to be given to the adoption and implementation of the concept of interactive governance. Interactive governance is defined as the whole of interactions among civil, public and private sectors (and including academia) taken to solve societal problems, and create new opportunities (Kooiman et al. 2008). This includes the development and implementation of policies, action plans and management plans. Governance is thus, among other things, about decision-making for the purpose of policy development, or the development of management plans. But it's also about implementation (involving all societal sectors), and the subsequent review and evaluation of the effects of implemented policies and plans. The important role for the scientific community, and the increasing need for results from science and research, targeted to the needs of formal advisory bodies and decision-makers (and for these results to be presented in formats and through media that will facilitate their effective uptake), needs to be highlighted in this context. Effective governance will thus require a framework within which clear institutional mandates and roles for the different societal sectors are assigned (covering each component of the policy cycle), and through which operational mechanisms can be implemented, within a meaningful spatial and thematic scope (Figure 8).

Practical arrangements that will facilitate interactive governance will thus need to be put in place for each of the three problems identified under the TDAs. In addition, an over-arching arrangement will be needed to ensure due cross-sectoral integration and coordination under the adoption of the EBM approach. Further, it is recognized that within the broader geospatial context of the CLME<sup>+</sup>, 3 distinct ecosystem sub-types each support different key fisheries and biodiversity. These are: reef ecosystems (and associated habitats), the continental shelf, and the pelagic ecosystem. As the impacts of the priority problems identified under the TDAs differ across these ecosystem types, differentiated policies, action and management plans may be required.

The latter is reflected in the structure of the CLME<sup>+</sup> SAP, which consists of six Strategies and four Sub-Strategies (Figure 6). Strategy 1 and 2 aim at enhancing the governance arrangements for respectively sustainable fisheries and the protection of the marine environment, whereas Strategy 3 aims at enhancing cross-sectoral coordination. Strategies 4 to 6 further aim at fine-tuning the governance arrangements, specifically for the management of living marine resources at the level of the three aforementioned ecosystem sub-types. Within the reefs and pelagic ecosystem sub-types, additional sub-strategies have been defined to foster implementation of the ecosystem approach for four of the regions' key fisheries: spiny lobster, queen conch, four-wing flyingfish, and large pelagics.

Figure 7 shows how the technical proposal for the RGF has been adopted under the SAP, by building upon the governance arrangements that are already in place in the region. From the figure it can be seen how actions under the CLME<sup>+</sup> Strategies 1-3 will help filling spatial and thematic gaps, e.g. through a coordination arrangement between Brazil and UNEP CEP (in support of the implementation of the Cartagena Convention and the associated SPAW and LBS Protocols), and through, on one hand, strengthened coordination and collaboration between the regional fisheries and environmental bodies UNEP and WECAFC, and on the other hand the application of the principle of subsidiarity within the different thematic/sectoral arrangements.

While it is thus acknowledged under the CLME<sup>+</sup> SAP that investments in governance architecture are a crucial first step towards the long-term, large-scale recovery of ecosystem goods & services in the CLME<sup>+</sup>, it is of critical importance that at all times such goal remains embedded

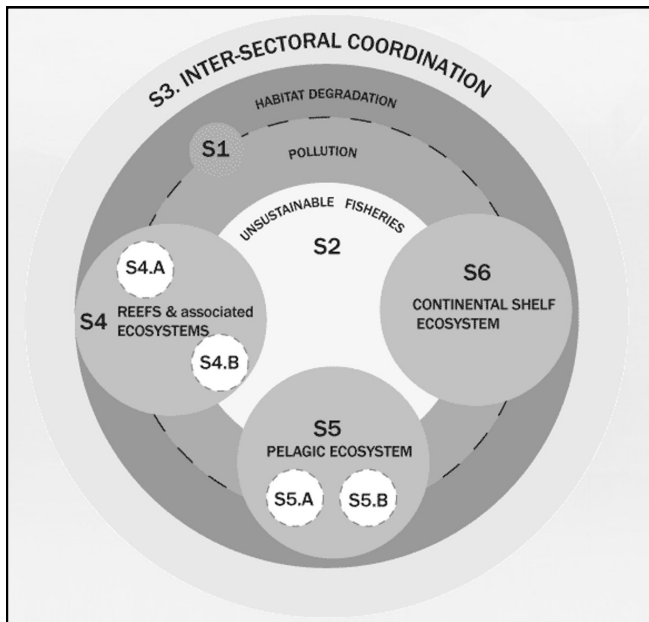


Figure 6. The six Strategies and four Sub-Strategies of the CLME<sup>+</sup> SAP.

within the context of, and is subjected to the over-arching environmental and socio-economical goals of: enhanced ecosystem health, enhanced fish stock status, social justice and enhanced human well-being. For this reason, the Governance Effectiveness Assessment Framework (GEAF, GEF TWAP; Figure 8) has been adopted by the forthcoming CLME<sup>+</sup> Project (2015 - 2019) as its broader Planning and Monitoring & Evaluation framework.

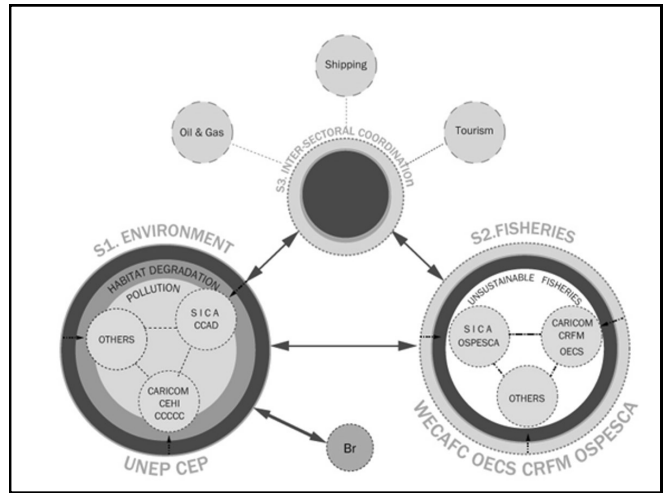


Figure 7. Strengthening shared living marine resources governance arrangements in the CLME<sup>+</sup> through the three main SAP Strategies

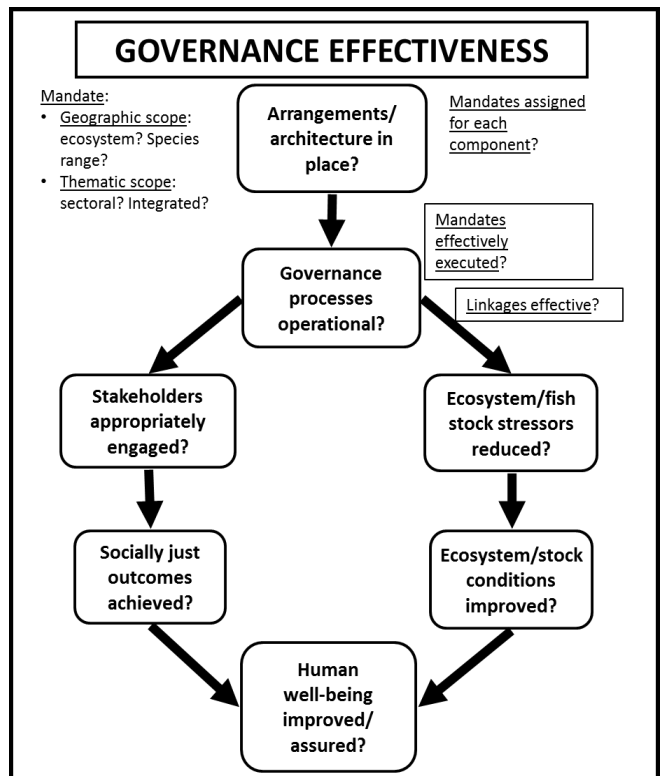


Figure 8. The Governance Effectiveness Assessment Framework (adopted from GEF TWAP, GEF ID 4489).

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