



A Monitoring and Evaluation Mechanism for the Caribbean Large Marine Ecosystem (CLME+) Strategic Action Programme (SAP)

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Catalyzing implementation of the Strategic Action Programme for the Caribbean and North Brazil Shelf LME's (2015-2020)



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ACRONYMS

ACS Association of Caribbean States
AMLC Association of Marine Laboratories of the Caribbean
CANARI Caribbean Natural Resources Institute
CARICOM Caribbean Community and Common Market
CARPHA Caribbean Public Health Agency
CATHALAC Centro del Agua del Trópico Húmedo para América Latina y El Caribe
CBD Convention on Biological Diversity
CCAD Comisión Centroamericana de Ambiente y Desarrollo
CCI Caribbean Challenge Initiative
CEP Caribbean Environment Programme
CERMES Centre for Resource Management and Environmental Studies
CI Conservation International
CLME Caribbean Large Marine Ecosystem
CLME+ Caribbean Large Marine Ecosystem and North Brazil Shelf LME
CNFO Caribbean Network of Fisherfolk Organizations
CRFM Caribbean Regional Fisheries Mechanism
CSC Caribbean Sea Commission
CSI Caribbean Sea Initiative
EA Ecosystem Approach
EBM Ecosystem-based Management
ECLAC United Nations Economic Commission for Latin America and the Caribbean
FAO Food and Agricultural Organization
GEF Global Environment Facility
IAC Inter-American Convention for the Protection and Conservation of Sea Turtles
ICCAT International Commission for the Conservation of Atlantic Tunas
IMO International Maritime Organization
IOC Intergovernmental Oceanographic Commission of UNESCO
IOCARIBE Inter-governmental Oceanographic Commission Sub-Commission for the Caribbean and Adjacent Regions
LBS Land Based Sources
LME Large Marine Ecosystem
LMR Living Marine Resources
MCS Monitoring, Control and Surveillance
MPA Marine Protected Area
NBC North Brazil Current
NIC National Inter-ministerial/Inter-sectoral Committee
OECS Organization of Eastern Caribbean States
OLDEPESCA Latin American Organization for Fisheries Development
OSP Oil Spill Protocol (Cartegena Convention)
OSPESCA Organización del Sector Pesquero y Acuícola del Istmo Centroamericano
RFMO Regional Fisheries Management Organization

SAP Strategic Action Programme
SDG Sustainable Development Goal
SICA Central American Integration System
SPAW Specially Protected Areas and Wildlife
TDA Transboundary Diagnostic Analysis
TNC The Nature Conservancy
UN United Nations
UNCLOS United Nations Convention on the Law of the Sea
UNDP United Nations Development Programme
UNEP United Nations Environment Programme
UNFCCC United Nations Framework Convention on Climate Change
UWI University of the West Indies
WCMC World Conservation Monitoring Centre
WCR Wider Caribbean Region
WECAFC Western Central Atlantic Fishery Commission
WWF WORLD WILDLIFE FUND

SUMMARY

In 2013, coastal countries of the CLME+ region adopted a 10-year Strategic Action Programme (SAP) for the Sustainable Management of the Shared Living Marine Resources of the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+ SAP, 2013). This SAP provides a roadmap for sustainable living marine resources management, which is to be achieved by targeted interventions supported by strengthening and consolidating cooperative governance arrangements at the regional and subregional levels.

The 5-year UNDP/GEF CLME+ Project (2015-2020) will initiate the implementation of the 10-year CLME+ SAP through a series of activities and outputs structured under distinct Project Components/Outcomes. The SAP specifies that “A sound Monitoring and Evaluation (M&E) Plan will be developed, to track the progress towards achieving the SAP objectives, and in order to facilitate adaptive management (CLME+ SAP, 2013). The M&E plan for the CLME+ SAP is supported by the Governance Effectiveness Assessment Framework (GEAF) which will be used develop indicators. The GEAF comprises seven categories of indicators aimed at assessing whether good governance arrangements are in place and whether they are achieving what they set out to do:

- Governance architecture
- Governance process
- Stakeholder engagement
- Social justice
- Ecosystem pressure
- Ecosystem state
- Human well-being.

M&E for the CLME+ SAP will consist of what can be described as three families of overlapping and interrelated sets of indicators:

- SAP action indicators address the progress in implementation of the CLME+ SAP Strategies and Actions.
- GEAF indicators that provide a broad strategic, long-term perspective on effectiveness of the interventions undertaken to implement the SAP, based on the GEAF categories and that target CLME+ countries and implementing partners, including the IGOs that comprise the CLME+ SAP ICM and the future Permanent Coordination Mechanism (PCM).
- State of the Marine Environment and associated Economies (SOME) indicators that summarise progress towards the CLME+ SAP vision derived from the GEAF indicators and provide regional level contextual trends targeting CLME+ countries, partners, the ICM/PCM membership and constituents, the development aid community, the public and interested parties globally.

The GEAF indicator set is developed around the regional level strategies (1-3 in the SAP), with reference to the resource specific strategies (4-6 in the SAP). This indicator set is based on a series of guiding questions in each of the GEAF indicator categories. For each question, indicators are proposed that will show the direction of change, or if a target has been set, status in relation to the target. Indicators variously include:

- Continuous variables (e.g. percent of countries engaged in agreements)

- Categorical (e.g. level of agreement = disagree strongly, disagree, agree, agree strongly)
- Cumulative scores (e.g. number of desirable characteristics demonstrated)
- Narrative (e.g. progress in a particular area such as inclusion of disadvantaged groups in strategic plans)

The baseline period for the SAP M&E mechanism is 2010-2015, with most indicators being reviewed at a periodicity to be defined by the ICM/PCM membership (in alignment with their governance and programming processes).

1 Introduction

The CLME+ region covers two of the world's 66 Large Marine Ecosystems (LMEs): the Caribbean LME (CLME) and the North Brazil Shelf LME (NBSLME). Jointly referred to as the CLME+ region, this vast marine environment is characterized by globally significant levels of biodiversity, and provides critical goods and services that support enhanced livelihoods, human well-being and sustained socio-economic development in this region and well beyond (CLME+, 2013).

In 2013, coastal countries of the CLME+ region adopted a 10-year Strategic Action Programme (SAP) for the Sustainable Management of the Shared Living Marine Resources of the Caribbean and North Brazil Shelf Large Marine Ecosystems (CLME+ SAP, 2013; Debels et al., 2017). The CLME+ SAP provides a roadmap for achieving effective governance of living marine resources by strengthening and consolidating regional and subregional cooperative governance arrangements levels. To date (April 2019) the SAP has been politically endorsed by 21 countries and 8 overseas territories. The current 5-year UNDP/GEF CLME+ Project now aims to "Catalyse the Implementation of the SAP for the Sustainable Management of Shared Living Marine Resources in the CLME+ region" (GEF ID 5542; 2015-2020). The CLME+ Project, with UNOPS as Executing Agency, became operational on 1 May 2015.

1.1 Overarching objective of the CLME+ Project

The development objective of the CLME+ Project is to facilitate Ecosystem-Based Management (EBM) and the implementation of the Ecosystem Approach for the management of key marine ecosystems in the CLME+ region in the next decade, in order to ensure the sustainable and climate-resilient provision of goods and services from shared marine ecosystems. The 5-year CLME+ Project (2015-2020) will initiate the implementation of the 10-year CLME+ SAP through a series of activities and outputs structured under distinct Project Components/Outcomes (Debels et al., 2017).

Project activities address the root causes of environmental degradation. The three most important problems impacting the societal benefits within the CLME+ region were identified during Transboundary Diagnostic Analyses (TDAs) conducted under the predecessor UNDP/GEF CLME Project (2009-2014) as unsustainable fisheries, habitat degradation and pollution (CLME, 2011). The TDAs found the main root causes of these three key problems to be: weak governance; limited human and financial resources; inadequate knowledge; inadequate public awareness and participation; inadequate consideration of the value of ecosystem goods and services; population and cultural pressures; and trade and external dependency.

The SAP defines six strategies with short-term (0-5 years) and medium-term actions (6-10 years). The first three strategies focus on the strengthening of regional-level governance and policy mechanisms:

- Strategy 1 focuses on the protection of the marine environment,
- Strategy 2 focuses on achieving sustainable fisheries,
- Strategy 3 aims at achieving broader coordination and integration of ocean policies, as a means to enable and enhance the implementation of an ecosystem approach (CLME+ SAP, 2013).

Strategies 4 to 6 focus on the implementation of the ecosystem approach to the management of the

CLME+’s three sub-ecosystem types and their associated living marine resources: the reefs and associated sub-ecosystems (Strategy 4), the pelagic sub-ecosystem (Strategy 5), and the Guianas-Brazil continental shelf sub-ecosystem (Strategy 6). Under Strategies 4 and 5, there are four additional sub-strategies to implement the ecosystem approach to four key CLME+ fisheries: Caribbean spiny lobster (sub-strategy 4A), queen conch (sub-strategy 4B), fourwing flyingfish (sub-strategy 5A) and large pelagics (sub-strategy 5B) (CLME+ SAP, 2013).

1.2 The SAP M&E frameworkⁱ

The SAP specifies that “A sound Monitoring and Evaluation (M&E) Plan will be developed, to track the progress towards achieving the SAP objectives, and in order to facilitate adaptive management (CLME+ SAP, 2013). M&E for the CLME+ SAP will be assisted by three interrelated sets of indicators and a process by which these indicators will be collected, reviewed, feed into decision-making and contribute to revision of the SAP as needed. Indicators may be quantitative, qualitative or narrative as appropriate.

Monitoring is interpreted to be ‘The development and application of an agreed set of indicators that show how the region is progressing towards achieving the SAP objectives’. This is based on progress towards targets, where these have been identified; or in a desired direction when targets are not known.

Evaluation is interpreted to be ‘A structured assessment of the progress as indicated by monitoring, given the broader regional context, to determine if it is satisfactory, and if not, why it is not satisfactory and what needs to be done to remedy the situation.’

What is deemed satisfactory will be determined a priori by the evaluators in terms of long-term, and interim targets or target directions.

1.2.1 The indicators for SAP Monitoring and Evaluation

M&E for the CLME+ SAP will consist of what can be described as several families of overlapping and interrelated sets of indicators.

Table 1: Descriptions and target audiences of the three interrelated indicator sets for CLME+

Indicator set	Description	Target audience
SAP action M&E indicators	These indicators address the 76 actions of the CLME+ SAP umbrella	CLME+ implementing bodies (ICM/PCM) and partners
GEAF indicators	These indicators provide a broad strategic, long-term perspective on effectiveness of the intervention undertaken to pursue the SAP, based on the GEAF categories	Countries and CLME+ implementing partners
SOME E indicators	These indicators summarise progress towards the CLME+ SAP vision linked to a GEAF based narrative and provide additional regional level contextual trends	Countries and CLME+ Partnership as well as the public and interested parties globally

1.2.2 The SAP M&E and Revision process

The current CLME+ SAP for the period 2015-2025 is intended to be the first of many SAPs that successively, will guide the region towards the ecosystem-based management of its coastal and marine resources, considered necessary to support human well-being in the region. Therefore, the process by which the SAP is reviewed and contributes to changes in implementation or revision of the SAP is critical for adaptive governance and long-term sustainability of the current initiative. It is also critical that this process have an institutional home. Developing that institutional home is the objective of SAP actions 3.2 and 3.3 and is well advanced at the time of writing of this report (CLME+ Project 2020). The institution must have both the mandate and the capacity, or access to that capacity, to complete the steps in the process in a timely and comprehensive fashion according to agreed procedures. As it relates to the monitoring plan, there must be the capacity to gather, manage and make accessible all the indicators deemed necessary by the ICM/PCM and for which data are available, and to promote development of data collection for indicators for which data are not currently available. As it relates to evaluation, there must be the capacity to report on the results of the monitoring by convening the expertise needed to review and provide recommendations on implementation changes needed. As it relates to the adaptation or revision of activities, actions or strategies, there must be the capacity to coordinate this process periodically and at the end of the 10 year implementation period when a new SAP would be drafted and endorsed.

The overall proposed SAP M&E process is shown in Figure 1. To be adaptive the process needs two feedback loops. The first loop, with the shortest time-frame, is about progress with SAP implementation resulting in advice on changes to implementation to strategies and actions. The second loop leads to revision of the SAP for a further 10-year period and includes examining the vision and principles upon which the SAP is based. Details of responsibility and processes for the various stages in the overall process cannot be shown without making the diagram overly complicated. Furthermore, some of those details are not yet known as they will be determined by the nature of the proposed Regional Coordination Mechanisms which is currently under development (CLME+ Project 2020).

2 The Governance Effectiveness Assessment Framework (GEAF) as the basis for the SAP monitoring indicator set

The assessment of governance effectiveness in GEF International Waters (IW) systems, which include LMEs, will be most easily approached if there is a framework to facilitate the development of appropriate indicators (Mahon et al., 2016, 2017). The framework must be practical so that it can be used to operationalize governance assessment. Some desirable criteria for such a framework are that it be:

- Easy to understand, so that it is clear what the selected indicators cover and what they do not;
- Comprehensive, so that the indicators cover all the aspect of governance that should be addressed;
- Well-grounded in governance thinking and concepts;
- Connected with actions that can be taken to improve governance.

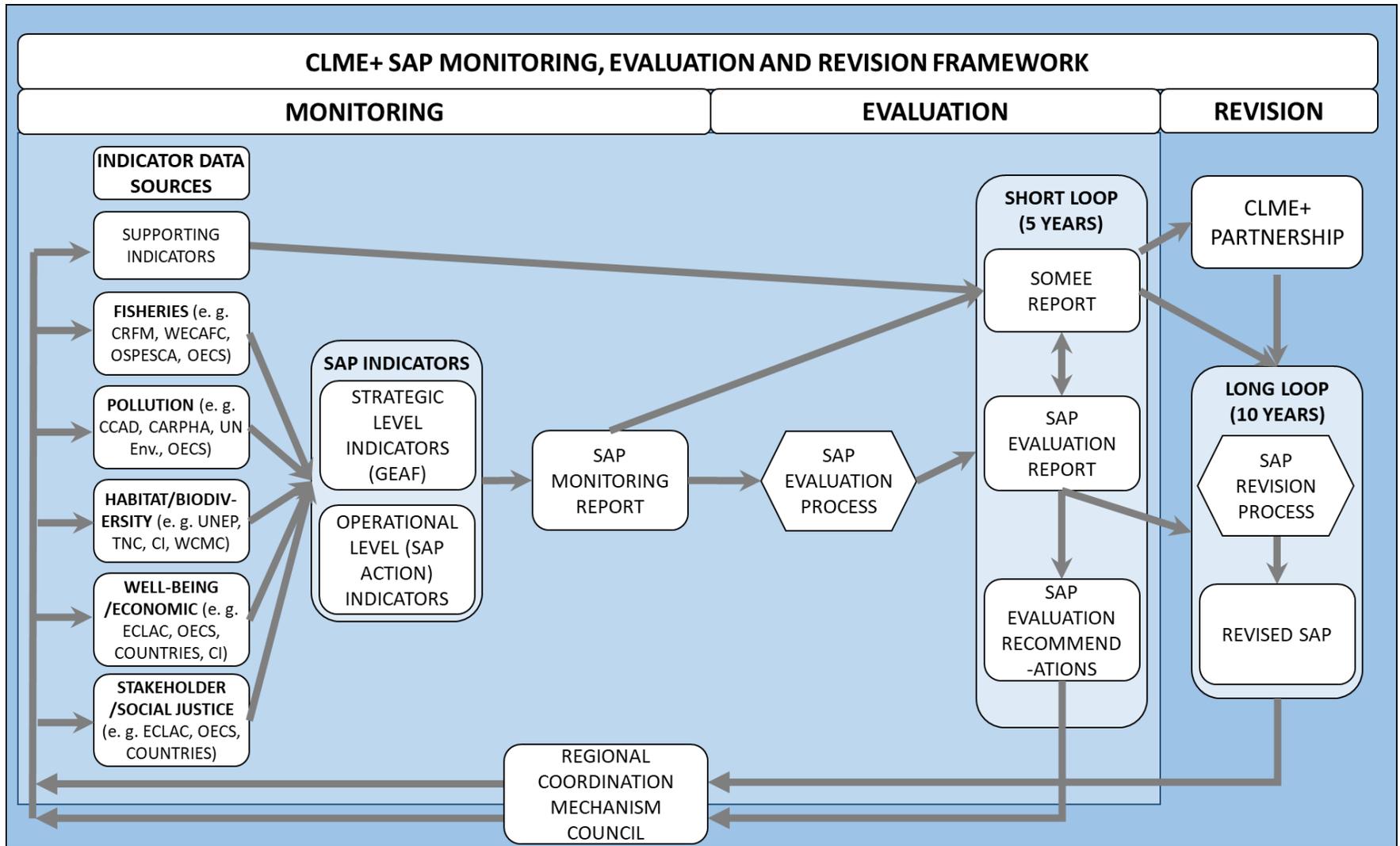


Figure 1: The proposed monitoring, evaluation and revision process for the CLME+ and subsequent Strategic Action Programmes (SAPs), showing the relationship between the groups of indicators, their sources and the CLME+ Partners (see list for acronyms).

The GEF promotes Ecosystem Based Management (EBM) in all its activities, including transboundary water systems. Therefore, any framework for LMEs must encompass all aspects of EBM. EBM as prescribed in the Convention on Biological Diversity includes sustainable use by humans (UNEP 1992). It requires that management take a holistic integrated approach that seeks to sustain the functionality and integrity of the ecosystems that provide ecosystem services. For fisheries in transboundary waters, the closely related Ecosystem Approach to Fisheries, as prescribed in the Code of Conduct for Responsible Fisheries, is also promoted (FAO 1995, 2003). The CLME+ SAP applies both EBM and EAF, with former being ecosystem focused and the latter fisheries focused. However, in both usages ecosystem sustainability and sustainable use are prominent.

The CLME+ Project has adopted the Governance Effectiveness Assessment Framework (GEAF) initially proposed by Mahon et al. (2013). The framework is based on the perspective that to assess governance, we must look not only at governance arrangements and processes, but also at outcomes and impacts. In this section, we provide the conceptual basis for the framework to be used and describe the framework. We also provide guidelines for application of the framework.

2.1 Conceptual background

Much has been written on evaluation frameworks and processes for sustainable development (e.g. United Nations, 2007; Singh et al., 2012). Most frameworks are thematic, as is the governance assessment framework presented in this paper. The advantage of a thematic framework is that it is issue oriented, appropriate for monitoring interventions and leads directly to proposals for remedial action. There are several governance frameworks that can be drawn upon in developing a practical governance assessment framework, for example, the Institutional Analysis Framework (Ostrom, 2009), Interactive Governance Approach (Kooiman et al., 2005), the International Lake Ecosystems Committee (ILEC) six pillars approach (RCSE and ILEC, 2014), the LME Governance Framework (Fanning et al., 2007) and the TWAP Open Oceans/LME modified DPSIR (IOC-UNESCO and UNEP, 2016a; 2016b). These frameworks range from highly conceptual to very operational. They are not mutually exclusive or independent and have many common elements. While each of the above frameworks contributes substantially to governance assessment thinking, none appear to meet all four criteria listed above. This led to the development of the GEAF by Mahon et al. (2016, 2017).

The assessment of governance arrangements and their effectiveness is a complex and multifaceted task (Young, 2013). It continues to be a significant subject for discussion among scholars and practitioners alike, particularly in assessing success in the area of integrated coastal and ocean management (Olsen, 2003, Stojanovic, et al. 2004, IOC, 2006, Bille, 2007; Tabet and Fanning, 2012; Jacobson et al., 2014; Maccarrone, et al., 2014; Botero et al., 2016).

To facilitate evaluation, Young (1999) suggests breaking what governance is expected to achieve into three components:

- The first is **'outputs'**, which are the arrangements that are put in place to achieve governance,
- The second is **'outcomes'** which represents changes in the behaviour of people that are the target of the arrangement,

- The third is **'impact'** which represents changes in the state of the resource use system that is the target of the arrangement.

The framework developed by Olsen (2003) for integrated coastal management takes a similar approach and like those developed by Ehler (2003) and Hockings et al. (2006) allows for consideration of both interventions and the assumptions underlying those actions. In these frameworks, the focus is on the entire management cycle and ensuring that mechanisms are in place within the governance architecture to allow for adaptation, if the desired outcomes are not being achieved. For example, Olsen (2003) examines four orders of outcomes: (1) enabling conditions; (2) changes in behaviour; (3) improvements in the system, and (4) sustainability achieved. Similarly, IOC (2006) considers four categories of indicators needed to assess governance of coastal and ocean systems: (1) inputs; (2) processes; (3) outputs; and (4) outcomes. As noted by Jacobsen et al. (2014, p.52), "without coverage across different components of the management cycle, identifying which elements of management to adapt is problematic."

The GEF has hitherto required monitoring of its IW projects on the basis of three categories of indicators: governance processes, ecosystem stress and ecosystem state (Duda 2002). Recent advances in governance thinking suggest that these three categories of indicators are not comprehensive enough to address ecosystem based objectives, and that an expanded set is needed for a full assessment of governance effectiveness, such as those promoted by Olsen (2003), Ostrom (2009) and Young (2013). Mahon et al. (2016) propose that, for the indicator framework to be in accord with current thinking regarding an Ecosystem Approach and the goal of sustainable development, there should be four additional categories of indicators beyond the three in use by the GEF IW Programme (Figure 2). These new categories are explicitly to evaluate: (1) governance architecture, (2) stakeholder engagement, (3) social justice and (4) human well-being. The fourth proposed category of human well-being is ultimately dependent on the effective achievement of the outcomes monitored by the previous categories identified in the framework. Stakeholder engagement and social justice are two 'people oriented' categories that are concurrent with the two 'ecologically oriented' categories of ecosystem stress and ecosystem state. These seven categories comprise the Governance Effectiveness Assessment Framework (GEAF) proposed by Mahon et al. (2013). The GEAF links them into a comprehensive governance assessment that covers both **'good governance'** and **'effective governance'**, as will be explained below.

2.2 Good governance and effective governance

The GEAF indicator categories (Figure 2) cover two major questions that should be included in a governance assessment:

1. Is 'good governance' in place? (have governance arrangements and processes been set up in a way that is consistent with accepted institutional norms and practices as indicated by the architecture, process and stakeholder engagement categories?);
Has there been 'effective governance'? (have governance practices achieved what they were established to do as indicated by the ecosystem pressure, ecosystem state, social justice and human well-being categories?).

Ultimately, ‘good governance’ characteristics might be expected to produce better governance results. However, while it is not possible to be definitive about the relationship between ‘good governance’ characteristics and ‘governance effectiveness’, good governance characteristics are often cited as being desirable attributes of governance arrangements in their own right (Lemos and Agrawal 2006; Lockwood, *et al.*, 2010).

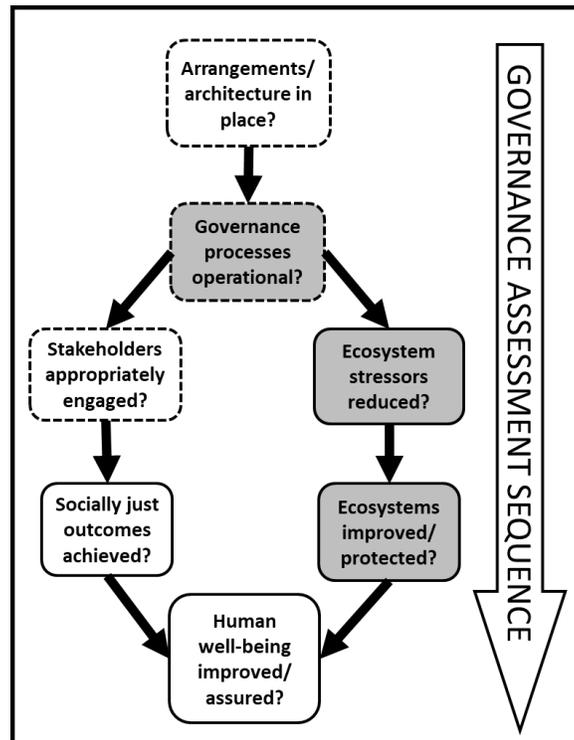


Figure 2. The transboundary Governance Effectiveness Assessment Framework (GEAF)(Mahon et al 2017). The original GEF IW indicator categories (Duda 2002) are shaded in grey. The new indicator categories are unshaded. Categories with a dashed outline pertain to ‘good governance’ the others to ‘effective governance’.

2.3 The assessment sequence

Local and national level political processes often take place on a much shorter time-scale than international ones, leading to problems of continuity of input into international processes between successive national administrations. There are also potential problems regarding the time-scales on which both national and international processes take place in relation to the biological, social and economic systems underlying the issues to be addressed. They may be longer than national and international political processes. Hence, the need for a sequence of graduated indicators that can track progress towards the ultimate goal of enhancing human well-being (Duda, 2002; UNEP, 2006). Notwithstanding the need for a sequential approach, long term targets or target directions are needed for indicators in all categories from the outset, otherwise earlier targets may not be appropriately aligned with the objectives of later targets.

The indicator categories shown in Figure 2 form a graduated assessment sequence (UNEP, 2006). Changes in the indicators for progress in the earlier (upstream) categories will be detectable sooner after implementation than the later (downstream) ones. Ecosystems and human communities may take decades to respond to reduce pressures. Therefore, desirable changes in human well-being are only likely to occur after achieving ecosystem and social justice outcomes. This graduated assessment sequence means that different time frames for baselines and periodicity of assessment may be needed for the various categories of indicators.

A further complication is that as one moves down the sequence, it will be more difficult to demonstrate cause and effect between interventions, outcomes and impacts. It may be clear that a process outcome (e.g. a plan or regulation) has led to a pressure reduction. However, tracking the effects of a pressure reduction on system state or of system state on well-being may be more difficult due to confounding factors that are external to the intervention that is being assessed. Therefore, in selecting indicators for these later categories, care should be taken to choose indicators that are most closely related to the objectives of the intervention and thus likely to reflect impacts of stress reduction and/or improved social justice.

2.4 Applying the GEAF

To assess governance of issues in a transboundary system, the GEAF must be applied systematically as follows:

1. Identify all issues in need of governance attention (e.g. through a TDA-type process);
2. Apply the full GEAF to each issue in turn;
3. Identify any overarching system-wide integration governance arrangements or mechanism;
4. Apply the architecture and process categories to any governance mechanism identified in step 3.

These steps are further discussed in section 3.2. In the case of the CLME+ region, the TDA identified the issues (CLME, 2013) and CLME+ SAP includes the strategic interventions developed to address them (CLME+ 2013). In order to ensure that there is comprehensive assessment of both good governance and effective governance, indicators should be developed and monitored in each of the seven categories for each issue of concern identified in that system. Adequate coverage of an indicator category may require several indicators.

2.5 The indicator categories

Following are brief explanations of the meaning and relevance of each indicator category as well as examples of guiding questions to identify indicators that may be applied. There is a wealth of readily available literature on the many indicators which may be appropriate for the range of issues and water systems identified for the CLME+ region. These include those identified in international and regional level agreements and guidelines such as the 1992 Convention on Biological Diversity, the 1995 FAO Code of Conduct for Responsible Fisheries and the 2015 Sustainable Development Goals. The actual indicators to be used for the CLME+ SAP will be context specific and examples of these are provided in Section 4 of this report.

2.5.1 Architecture in place?

Governance architecture is the institutional context for the governance process. It is the rules and upon which governance will be based as well as the organisational arrangements and processes (e.g. bodies and how they will function) that are put in place to ensure that the rules are followed. Governance architecture is seen to be an essential component of the framework because assessment of the existing or proposed additional categories of indicators will be dependent upon the institutional structure in place to facilitate decision-making, planning and implementation. This is an essential precursor of the assessment of governance process (Mahon et al. 2013). This distinction is considered to be particularly important in the case of multilevel nesting typical of international environmental governance systems (Young, 2002; Fanning et al., 2007; Biermann, 2007). If architecture is absent, incomplete or inappropriate then the processes for achieving stated outcomes will either not occur, or will be ineffective. With regard to governance architecture as a category of the assessment framework, the key questions are:

- What institutional arrangements are in place for governance?
- Is their mandate and thematic scope adequate for EBM?
- Are they formal or informal?
- Do they cover the full set of key issues?
- Do they make where responsibilities for implementation lie clear?

2.5.2 Governance processes operational?

Once appropriate arrangements are in place, it is necessary to ensure that the processes provided for in the arrangements are actually taking place as envisaged. Any good governance arrangement will provide for a variety of processes ranging from policy setting through planning to implementation (Kooiman *et al.*, 2005; De Stefano et al., 2014). It will also include processes for vertical and lateral interactions needed for the multilevel, polycentric governance typical of transboundary systems, for example the operation of National Interministerial Committees (NICs) (Fanning et al., 2007, Vousden, 2016, McConney et al., 2016). Process indicators respond to queries about operations such as:

- Has policy for the issues been developed?
- Is there a management plan?
- Have strategies for implementation been developed?
- Does the plan adequately reflect EBM or EAF?
- Has the plan been disseminated widely?
- Have regulations been developed to give effect to the plan?
- Has sufficient capacity been developed to enable plan implementation that engages the full range of stakeholders?
- Are enforcement mechanisms in place?

2.5.3 Stakeholders appropriately engaged?

The engagement of stakeholders is now accepted as highly desirable, if not essential, for processes that are effective, transparent and legitimate (Bass et al., 1995; Borrini-Feyerabend et al., 2007).

Nonetheless, it is common to find that mechanisms for stakeholder engagement are subverted for political expediency and disconnected from decision-making (Jones et al., 2016). Hence, there is the need for indicators to ensure that these mechanisms are indeed working. Enabling mechanisms for stakeholder involvement in natural resource management, often broadly referred to as stakeholder empowerment, can be expected to range widely across specific skill sets, training, community/civil society organisations, exposure to how things are being done elsewhere and learning-by-doing programs. The key questions in this indicator category are:

- Do governance processes operate according to agreed principles for stakeholder engagement?
- Are enabling mechanisms in place to ensure appropriate levels of stakeholder engagement?
- Are stakeholders engaged?

2.5.4 Socially just outcomes achieved?

The social justice category in the indicator framework is needed because it is possible to achieve stressor reduction and ecosystem state improvement by disadvantaging some sets of people relative to others (Young 2013). There are numerous examples of people losing access rights and food security as a result of increased conservation (Mathew, 2006). In many instances the disadvantaged are already marginalised with regard to benefits, for example, indigenous peoples, rural communities and the poor (Jentoft et al., 2003, Makagon et al., 2014). Given its prominence as an issue in sustainable development, the social justice aspect of governance needs separate treatment. The major questions here include:

- Are processes resulting in outcomes that are consistent with agreed principles such as equitable sharing of benefits, reduction of poverty, protection of the rights of the poor, women, minorities and indigenous peoples?
- Is there equitable sharing of responsibility for sustainability?

2.5.5 Ecosystem stressors reduced?

Ecosystem stressors are the proximate drivers of ecosystem degradation and unsustainable use. They are the consequence of human behaviour, for example, release of pollutants into water systems, excess fishing effort, destructive fishing practices, overharvesting of coastal forests for firewood and charcoal. Consequently, stress reduction indicators will often pertain to tracking changes in the behaviour of resource users and/or their institutions. In many instances this will also extend to tracking ultimate drivers of those behaviours such as market demand, subsidies or investment funding. As one of the original GEF indicator categories, stress reduction indicators are already well described with examples by Duda (2002). The primary question here is:

- Are measures in place actually preventing or reducing the human activities which are exerting the stress on the system? For example, are inputs of pollutants to marine ecosystems reduced, is fishing effort on fish stocks reduced, is harvesting of coastal forests reduced?

2.5.6 Ecosystem state improved/protected?

A primary objective of transboundary water system governance is to achieve actual improvement in the capacity of water systems to deliver ecosystem services, or at least prevent further degradation. As one of the original GEF indicator categories, ecosystem state indicators are already well described with examples by Duda (2002). However, the increased prominence of EBM and EAF since then calls for additional indicators to monitor progress towards achievement of those objectives. The key question for this indicator category is:

- Have preventing or reducing the human activities that stress the ecosystem resulted in desired changes in the state of key environmental variables in the system? For example, in relation to the stressors listed in the previous section, are levels of water pollutants reduced, are fish stocks recovering and producing sustainable yields, are exploited coastal forests regenerating?

2.5.7 Human well-being improved/ assured?

The ultimate objective of GEF IW interventions must be to improve human well-being. The emphasis on human well-being became prominent in the development of the conceptual framework for the Millennium Assessment which places it as the central focus for assessment (Alcamo *et al.*, 2003).

Increased human well-being is perhaps the most difficult outcome to measure. Attention has only recently shifted from economic variables such as Gross Domestic Product (GDP) and the Human Development Index (HDI) used by the World Bank and other development agencies as measures of development success to measures of well-being (Costanza, *et al.*, 2014; Kubiszewska *et al.*, 2013; Rogers, *et al.*, 2012; Bacon *et al.*, 2010). The key idea in these formulations is that there is much more to well-being than income and material things. In some instances, there are initiatives to measure human happiness as a component of well-being (Bacon, *et al.*, 2010; Young Foundation, 2009). Furthermore, well-being can be affected by many factors external to the LME, therefore despite successful interventions, it might decrease due to other factors. This requires the use of well-being indicators that are as closely related as possible to the interventions being pursued. Thus the critical question in this indicator category is:

- Has attention to social justice and sustainability of ecosystem goods and services brought about the desired assurance of, or improvements in human well-being and taken trade-offs with ecosystem status into account? For example has reduction in water pollution reduced incidence of water borne disease, has increased fished yield led to increased food and livelihood security, has regenerated coastal forest led to reduced risk of coastal flooding in storms?

2.6 Applying the GEAF for CLME+ SAP monitoring

The GEAF will be applied to the objectives of the CLME+ SAP to support monitoring and evaluation of progress towards them at the regional strategic level. Ideally, for the SAP monitoring and evaluation at this level to provide an accurate picture of progress, it will have to be underpinned by operational monitoring at lower levels. Some examples follow.

For a simple example, a regional picture of progress towards a target of 10% coverage by MPAs could be the aggregate of progress at the country level in the many countries that make up the region, such that $\text{Regional \% MPA coverage} = 100 \times \frac{\text{sum of national MPA area}}{\text{sum of national marine space}}$. However, this simple indicator will not provide any information on how that coverage is distributed geographically or by ecosystem type. Nor will it indicate the extent to which the MPAs are effective. If that information is desired the indicator must be refined or other indicators must be developed to reflect those objectives.

Fisheries present a more complex example of how lower level indicators may be aggregated to provide a regional picture. Taking large pelagic fisheries as an example, and the percentage of stocks that are in the categories underexploited, optimally exploited or overexploited as the indicators of interest, there would be the need for an assessment of the status of each exploited large pelagic species in the CLME+ region. The methods used for, the degree of sophistication of, and the degree of confidence in these assessments may vary widely among stocks; but they can be combined to give a regional picture once the assessment places the stock in one of the three above categories. In both of the examples above, the information can be aggregated at subregional levels if desired.

3 Types of indicators and criteria for their selection

In support of monitoring and evaluation, indicators can provide the feedback necessary to identify what has been done and to measure progress towards stated management goals and objectives and to determine whether this progress has been satisfactory. The process for monitoring and evaluating both policy and management should be iterative and adaptive, leading to rerouting, rereading and reinterpretation of the stated goals and objectives and hopefully improving decisions and reducing uncertainty over time (Botero et al., 2016).

The use of indicators in this process is essential for monitoring, assessing, and understanding ecosystem status, impacts of human activities, and effectiveness of governance and management measures in achieving objectives as increasingly recognised by policy and management bodies (e.g. EC, 2010; UNEP-WCMC, 2011; Johnson et al., 2013). The following sections discuss both the theory and approach used in the identification and selection of indicators for the GEAF supported M&E mechanism proposed for the CLME+ SAP.

3.1 Types and criteria for indicator selection

Strictly, an indicator shows if there has been some change in a selected attribute of the system being monitored. The indicator should have directionality so that it shows whether the attribute is improving or deteriorating. Ideally, there are targets or thresholds to which indicator values should aim for or be avoided (Caddy and Mahon, 1995; Ehler, 2003; Shin et al., 2010). However, when the state of an attribute is clearly undesirable, identifying the direction of change needed for improvement may be enough to guide governance action until targets can be determined (Berkes et al., 2001).

An understanding of 'where we are' (baseline) relative to 'where we want to go' (objectives) is essential to develop and implement an appropriate monitoring mechanism. To develop meaningful indicators, it is desirable to have input from all stakeholders, including technical experts, managers and policy makers

and users to the extent feasible. Therefore, building and strengthening the dialogues with science-policy interfaces are critical first steps for getting consensus around setting objectives and identifying relevant indicators.

For each of the strategies in the CLME+ SAP, specific actions have been identified, with targets identified for some (CLME+, 2013). The challenge in developing the M&E mechanism now rests with identifying the suite of indicators that best meets the needs in each particular application. This can be difficult given that marine ecosystems differ in availability of historical data, monitoring capacity, prosecution of fisheries, other human uses, and governance systems, as well as in their ecological properties (Rice and Rochet, 2005). All these factors may affect the utility of a specific indicator (Olsen, 2003), making it obvious that no single suite of indicators is universally the best. From a range of possible indicators, attributes or criteria that can be helpful to narrow down the selection include (Johnson et al., 2013):

- political relevance (governance performance);
- data and information are readily available (i.e. cost-effectiveness);
- context sensitivity: sensitive to changes in aspects being monitored and allowing the detection of trends or impacts resulting from plan implementation (i.e. specific and responsive);
- comparability (in time and space allowing for interregional or international comparisons);
- robustness and scientific credibility;
- show trends over time (i.e. interpretable);
- scientifically sound (i.e. grounded in theory);
- concrete, and easily understood;
- measurable, specific, and capable of being updated regularly; and
- adapted to intended users, so that they answer the needs of the different target-groups.

As noted by Rice and Rochet (2005), indicator-based decision-making can give managers and decision-makers structured insight into the likely effects of alternative actions, which is essential in ecosystem-based management approaches. However, this is only true if the performance characteristics of the indicators are understood, and if their trends and current values relative to reference points can be interpreted correctly.

3.2 Focus on CLME+ issues and GEAF categories

According to Quiroga (2009), indicators must have a 'methodological sheet' or 'guidance' to include information regarding their identification, calculation and results interpretation. This is particularly relevant for the CLME+ SAP M&E mechanism given the diversity and complexity to be found in the region and given that different organizations of the SAP ICM and future PCM will have to report on these indicators. Nevertheless, while having a clearly articulated set of indicators is critical to evaluation, equally important for the CLME+ SAP is a clear understanding of how these indicators are measured, by whom, and with what periodicity (Bille, 2007).

To address these concerns and the reporting needs of the SAP at the regional level, the use of the GEAF as a monitoring and evaluation mechanism is dependent on a number of sequential steps being followed. An example drawing on the flyingfish fisheries (Strategy 5A; Enhance the governance

arrangements for implementing the ecosystem approach for the flyingfish fisheries) is provided immediately following this generic explanation of the steps. These include:

1. The key issues facing the region need to be specified. These issues can be both current and emerging based on expert and local knowledge. They can also be ecological, socio-economic, political, cultural, etc. At the regional level, the three key issues identified in the transboundary diagnostic analysis are overfishing, pollution and habitat degradation, with climate change as crosscutting. Additionally, a number of sub-issues have been identified in the CLME+ SAP such as those relating to different fisheries.
2. For each of the identified issues and sub-issues, agreement on a priority level for attention needs to be established (as was specified in the SAP), as this focuses efforts aimed at developing and implementing relevant management interventions.
3. For each of the identified priority issues and sub-issues, a series of questions for each of the seven GEAF categories is developed, leading to an awareness of the nature of the information needed to answer each question.
4. Based on step 3, key indicators are identified and availability of information to track each identified indicator is assessed (see section 3.1 for guidance on the framework for selecting indicators). In the absence of available information for a given indicator, a decision needs to be made on whether to replace the indicator with another one for which there are data, or implement a monitoring program to collect data so as to fill the data gap.
5. A key suite of indicators for each issue is refined and information for each indicator is collected and assessed at agreed intervals.
6. The performance of the interventions relative to the stated goals for the regional level is tracked based on the seven categories of the GEAF. This allows for an enhanced awareness of the resolution of existing issues and the identification of new issues to be addressed in the next iteration of the monitoring and evaluation cycle.

These steps allow for a targeted approach to monitoring and evaluation that ensures priorities for interventions are clearly articulated, based on an understanding of the key issues identified with input from and vetted by stakeholders and policy makers. The process also allows for an increased understanding of how the seven indicator categories of the GEAF address different aspects of governance that were identified as weak in the causal chain analysis for the CLME+ region.

3.2.1 Working through the GEAF steps using Strategy 5A. Enhance the governance arrangements for implementing the ecosystem approach for the flyingfish fisheries

The description in Box 1 uses the example of the eastern Caribbean flyingfish fishery to elaborate on how the GEAF might be applied to Strategy 5a. Figure 3 presents a hypothetical scenario to illustrate the different levels at which decisions affecting the flyingfish fishery are expected to take place and the differing nature of the data and information needed at each level to inform decision making.

Box 1:

Working through the GEAF steps for Strategy 5A - Enhance the governance arrangements for implementing the ecosystem approach for the flyingfish fisheries

Step 1: Identifying the issue and sub-issues

Earlier work in the TDA regarding the issues, identified over-fishing as a key priority issue in the CLME+ region. Drawing on this finding, the CLME+ SAP has identified one of its major outcomes to be the enhancement of regional governance arrangements for sustainable fisheries (Strategy 2). It subsequently sought to identify priority fisheries for intervention.

Step 2: Assigning priority

Key sub-regional and regional fisheries providing substantial socio-economic and livelihood benefits to the countries in the region were identified, including the need to focus on enhancing governance arrangements for implementing the ecosystem approach for the flyingfish fisheries.

Step 3: Sample questions to consider pertaining to each of the GEAF categories

Architecture:

GA1. Is there a mechanism in place to facilitate sustainable fisheries among the organizations (WECAFC, CRFM, OSPESCA and possibly OECS) responsible for fisheries in the region?

GA1.1 If so, is the mechanism a fully functioning policy cycle, based on internationally accepted best practices, as calculated using the TWAP methodology (Mahon et al. 2013)?

GA1.2 If not, what should be included in the arrangement to ensure a fully functioning policy cycle?

GA2. Does each organization with responsibilities for fisheries in the region have the mandate and capacity to support sustainable fisheries in the region?

GA2.1 If so, is the arrangement a fully functioning policy cycle, based on internationally accepted best practices, as calculated using the TWAP methodology (Mahon et al. 2013)?

GA2.2 If not, what should be included in the arrangement to ensure a fully functioning policy cycle?

GA3. Is there a mechanism in place that links subregional arrangements for pelagic fisheries to facilitate the ecosystem approach, taking into account interactions, such as predator prey relationships or fleet interactions between different pelagic fisheries?

GA3.1 If so, is the mechanism part of a fully functioning policy cycle, based on internationally accepted best practices, as calculated using the TWAP methodology (Mahon et al. 2013)??

GA3.2 If not, what should be included in the arrangement to ensure a fully functioning policy cycle?

GA4. Is there a FAO-WECAFC and CRFM sub-regional arrangement for the assessment and management of the flyingfish fisheries including the establishment of a decision-making capacity for management? Is there an appropriate agreement between CRFM and France, given the need to involve Martinique in the management of the flyingfish fishery?

GA4.1 If so, are the arrangements part of fully functioning policy cycles, based on internationally accepted best practices, as calculated using the TWAP methodology (Mahon et al. 2013)?

GA4.2 If not, what should be included in the arrangements to ensure a fully functioning policy cycle?

Process

GP1. Is there the capacity among the sub-regional organizations appropriate to develop, adopt and implement management and conservation measures for the flyingfish fisheries?

GP1.2 If so, has a plan been developed?

GP1.2 If so, What is the level of engagement among countries to adopt the plan?

GP2. Have regulations been developed to give effect to the plan among member countries?

GP2.1 If so, What is the level of implementation of the plan among countries?

GP.2.2 What is the level of monitoring and enforcement?

Stakeholder Involvement

ST1. Do governance processes operate according to agreed principles for stakeholder engagement for the flyingfish fisheries, e.g. transparency, accountability, inclusiveness, consultation, etc.?

ST2. Are mechanisms in place to ensure appropriate levels and diversity of stakeholder engagement (NGOs, private sector, etc.) across all flyingfish fisheries countries?

Social Justice

SJ1. Are processes in place to ensure equitable distribution of the allowable catch for flyingfish among the countries?

SJ2. Are processes in place to ensure women, disadvantaged groups, etc. are given equitable access to the resource within and across member countries?

SJ3. Is attention to displacement issues addressed?

SJ4. Are health related issues being considered throughout the flyingfish fisheries fish chain?

Pressure

EP1. Is flyingfish fishing effort at a level that is considered acceptable for the subregion/ nationally

EP2. Are ecosystem linkages (e.g. predator/prey relationships; marine pollution) taken into account?

EP3. Is the use of destructive gear monitored for the flyingfish fisheries at the subregional/national level?

EP4. Are non-ecological trends such as market trends and traceability considered in the governance of flyingfish fisheries at the subregional/national level?

State

ES1. Are flyingfish stocks at sustainable levels?

ES2. Is marine water quality at safe and acceptable levels?

ES3. Have changes in people’s behaviour to reduce conflicts and stresses resulted in desired changes in the state of key environmental variables in the system?

Human Well-Being

HW1. Are fishers catches/incomes increased?

HW2. Are alternative livelihoods available if necessary?

HW3. Has food security been improved/assured?

Step 4: Identification of key indicators and availability of information

Working with the managers and providers of data and information on the flyingfish fisheries, the questions in Step 3 are used to identify indicators that can be measured and reported. For example, for governance architecture, a key indicator is ‘completeness’ that assesses the level of functionality of the policy cycle in each of the arrangements pertinent to the flyingfish fishery. For governance process indicators, the presence of policies, strategies, management plans, legislation and regulations would be likely indicators. . In terms of stakeholders, the level of engagement (percent and number of countries) participating in an arrangement would be a likely indicator, as would participation of various types of stakeholders in the governance processes. Social justice indicators would be determined primarily from national census data and fisheries NGOs. Pressure indicators could include fisheries statistics on fishing effort from WECAFC and national fisheries departments’ reports to FAO. A key state indicator for flyingfish could be catch per unit effort. Lastly, indicators of human well-being would track increase in income over time and/or availability of alternative livelihoods coupled with increase in income.

Step 5: Agreement on Indicator Suite and Reporting Period for Flyingfish Fisheries

This stage is dependent on availability of data to monitor the identified indicators for each of the GEAF categories for the flyingfish fisheries in the region and agreement on what to do should data not be available. Options would include dropping the indicator or keeping it and putting in place a program to collect the necessary data.

Step 6: Performance of SAP Interventions for Flyingfish Fisheries

As noted in this document, the earlier stages of the GEAF would have a shorter time frame for evaluating progress of the SAP as compared to later categories such as human well-being.

As indicated in Box 1, to be effective, management of flyingfish fisheries requires the interaction of policy cycles at the local, national and sub-regional levels specifically for the governance and management of the fisheries and at the regional level, for the broader marine policy cycle. These interactions are shown in Figure 3, where an assumed multilateral management strategy has been developed to reduce inter-annual variability in landings and reduce the risk of short-term collapse by setting a status quo level of fishing effort to be distributed equitably among the fishing countries (Fanning et al., 2013). The implementation and review of actions undertaken to achieve these objectives, and of the objectives themselves, must take place across different levels on the institutional scale, especially for transboundary resources. Figure 3 illustrates how the various aspects of this review might be distributed among different levels in a system where there are complete functional cycles and effective linkages and the suite of issues that would arise from the identified management strategy. The

process starts with the identification of goals and objectives agreed to by countries participating in the fisheries.

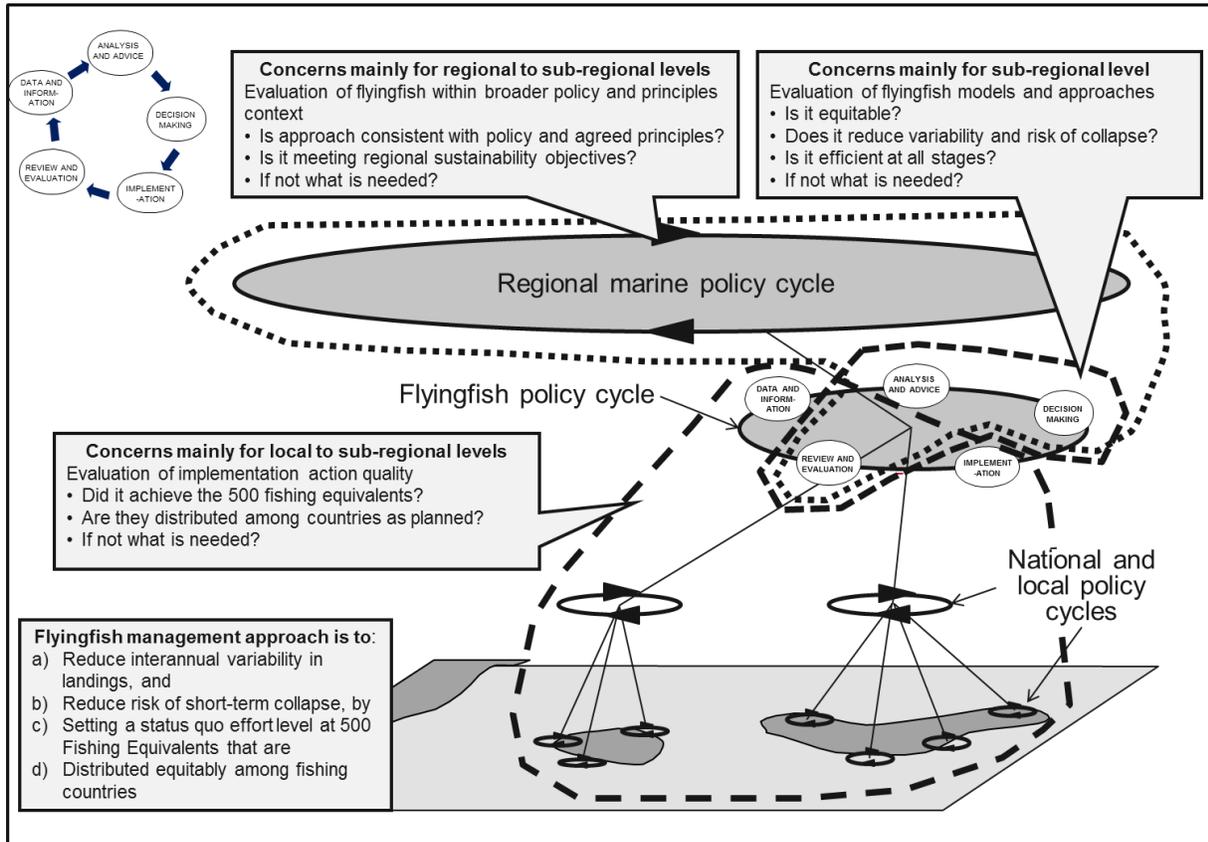


Figure 3. Applying the LME Governance framework to the eastern Caribbean flyingfish fishery (Source: Fanning et al., 2013)

Each set of issues can be allocated to one of three management zones as indicated in Figure 3 using dashed lines. These zones indicate the parts of the framework most involved in the particular issues. For example, the zone involved with issues mainly at the sub-regional level would focus on obtaining the advice needed to set the management objectives for the fishery and the subsequent review and evaluation to determine if the objectives have been met—Did the implementation of the decision at the national level reduce variability and risk of collapse? Was the process of allocating fishing equivalents equitable and efficient? How might any shortcomings be addressed? Stakeholders that should be involved in this zone include the member states of the sub-regional organizations involved in fisheries decision-making, sub-regional representatives of fisher folk organizations harvesting the resource, technical advisory bodies and representatives from other sub-regional policy processes that can affect the achievement of the flyingfish policy objectives. For the management zone involved with issues mainly at the local to sub-regional levels, two main areas of focus are identified. The first centers around the provision of data and information obtained by aggregating local level data and information on the fishery into a collective national perspective so that it can inform the sub-regional policy cycle in setting management objectives. The second focuses on implementing the decisions made by the sub-regional policy cycle at the national and local levels. Key questions addressed by this zone seek to assess the

quality of the implementation by the countries, including whether the set fishing equivalents were achieved and were distributed among the countries as planned. Stakeholders for this zone include national level government advisors and decision-makers and fishing industry representatives as well as those from affected fishing communities. The third management zone involves issues mainly at the regional and sub-regional levels and evaluates the success of the flyingfish management strategy within the broader set of marine-related policies and principles for the Wider Caribbean Region. In this zone, the flyingfish specific management approach developed at the sub-regional level is evaluated in the broader regional level marine policy cycle to determine its consistency in contributing to region-wide sustainability objectives and if not, to assess what needs to be changed. Key stakeholders to be involved in this zone include the member states of the sub-regional and regional organizations involved in fisheries decision-making, regional representatives of fisher folk organizations harvesting the resource, technical advisory bodies and representatives from other marine sectors at the regional level that are both affected by and affect the achievement of the flyingfish policy objectives.

4 The actual indicator set for SAP M&E

This section outlines the preliminary proposed set of indicators for the three major issues and for overall regional level ocean governance. Note that these initial questions were indicative only and evolved as the GEAF based monitoring and evaluation developed as presented in the report entitled “Caribbean Large Marine Ecosystem+ Strategic Action Plan Monitoring Report: Baseline 2011-2015” (Fanning and Mahon 2021).

4.1 GEAF Indicators for Fisheries Governance

Guiding questions to be addressed by indicators
Architecture
Are arrangements in place to address fisheries governance at regional/subregional levels?
Is there a mechanism for integrating regional/subregional fisheries policy cycles at the policy level?
Are there mechanisms in place to ensure national coordination and national-regional interaction?
Process
Are there regional/subregional policies in place for fisheries? (WECAFC, OSPESCA, CRFM, OECS)
Are there regional/subregional strategic plans in place for fisheries?
Are there regional/subregional management plans in place for fisheries?
Is there regional/subregional (harmonised) legislation in place for fisheries?
Are there regional/subregional (harmonised) regulations in place for fisheries?
Is there evidence that the processes for fisheries are conducted according to agreed principles?
Is there evidence of integration as per the mechanism referred to in F2
Ecosystem stressors (pressure)
Is fishing effort at the agreed upon level for the region/subregion?
Is the use of destructive gear minimised for each of the key fisheries?
Has IUU fishing been minimised

Guiding questions to be addressed by indicators
Ecosystem State
Are fish stocks at sustainable levels? (summary of questions listed below)
Are reef fish stocks at sustainable levels?
Are lobster stocks at sustainable levels?
Are conch stocks at sustainable levels?
Are deep slope snapper/grouper stocks at sustainable levels?
Are shrimp and groundfish stocks at sustainable levels?
Are large pelagic fish stocks at sustainable levels?
Are flyingfish stocks at sustainable levels?
Stakeholder Engagement
Are fisheries agreements well subscribed to by countries?
Are fisheries stakeholders participating in regional/subregional processes
Are country fisheries agencies participating in regional/subregional fisheries processes
Are other regional IGOs participating in regional/subregional fisheries processes?
Are regional fisheries NGOs participating in regional/subregional processes?
Are regional fisheries private sector bodies participating in regional/subregional fisheries processes?
Are regional environmental NGOs participating in regional/subregional fisheries processes?
Social Justice
Status of implementation of FAO SSF guidelines relating to social justice in SSF?
Are there national policies regarding the participation of women in fisheries?
Are there national policies regarding the preservation of cultural traditions in fisheries?
Are there national policies regarding the participation of disadvantaged groups and minorities in fisheries?
Are there national policies regarding the equitable access to the resource for all stakeholder categories fisheries?
Are there national policies regarding the distribution of benefits between small-scale and large-scale fisheries?
Do regional fisheries agreements include specific reference to disadvantaged groups and minorities? Social justice issues as per the above list??
Are the measures taken to reduce fishing pressures socially just (differentially negatively impacting certain groups), Include measures to mitigate impacts
Human Well-Being
Have fisher folk incomes increased?
Has incidence of malnutrition in fishing communities decreased?
Has loss of cultural identity with fisheries resources and traditions been reduced?
Has food security been improved/assured?
Has fish loss/waste been reduced?
Has fisher safety at sea been improved?

4.2 GEAF Indicators for Pollution Governance

Guiding questions to be addressed by indicators
Architecture
Are arrangements in place to address marine pollution governance at regional/subregional levels?
Are there mechanisms for integrating regional/subregional pollution policy cycles at the policy level?
Are there mechanisms in place to ensure national-regional interaction?
Process
Is there regional/subregional policy in place for pollution? (UNEP, CCAD, CAR/RCU, CARPHA)
Are there regional/subregional strategic plans in place for pollution?
Are there regional/subregional management plans in place for pollution?
Is there regional/subregional (harmonised) legislation in place for pollution?
Are there regional/subregional (harmonised) regulations in place for pollution?
Is there evidence that the processes for pollution are conducted according to agreed principles?
Pressure
Are land-based sources of pollution inputs reduced to agreed upon levels? Urban wastewater
Are land-based sources of pollution inputs reduced to agreed upon levels? River inputs
Are land-based sources of pollution inputs reduced to agreed upon levels? Groundwater
Are land-based sources of pollution inputs reduced to agreed upon levels? Solid waste
Are marine-based sources of pollution reduced to agreed upon levels at a regional/subregional level?
State
Is marine water quality at agreed upon levels?
Stakeholder Engagement
Are pollution agreements well subscribed to?
Are pollution stakeholders participating in regional/subregional processes
Are country environmental agencies participating in regional/subregional pollution processes
Are other regional IGOs participating in regional/subregional pollution processes?
Are regional pollution NGOs participating in regional/subregional processes?
Are regional environmental private sector bodies participating in regional/subregional pollution processes?
Are regional environmental NGOs participating in regional/subregional pollution processes?
Social Justice
Do regional pollution agreements include specific reference to disadvantaged groups and minorities?
Are the measures taken to reduce pollution pressures socially just (differentially negatively impacting certain groups)
Human Well-Being
Has pollution reduction protection benefitted human health?
Has pollution reduction benefitted livelihoods

Guiding questions to be addressed by indicators
Has pollution reduction resulted in improved access to recreational amenity areas
Has loss of cultural identity with coastal ecosystems and resources been reduced?

4.3 GEAF Indicators for Habitat Degradation/Biodiversity Governance

Guiding questions to be addressed by indicators
Architecture
Are arrangements in place to address habitat degradation governance at regional/subregional levels?
Are there mechanisms for integrating regional/subregional habitat degradation policy cycles at the policy level?
Are there mechanisms in place to ensure national-regional interaction?
Process
Is there regional/subregional policy in place for habitat degradation/biodiversity? (UNEP, CBD, CCAD)
Are there regional/subregional strategic plans in place for habitat degradation/biodiversity?
Are there regional/subregional management plans in place for habitat degradation/biodiversity?
Is there regional/subregional (harmonised) legislation in place for habitat degradation/biodiversity?
Are there regional/subregional (harmonised) regulations in place for habitat degradation/biodiversity?
Is there evidence that the processes for habitat degradation/biodiversity are conducted according to agreed principles?
Pressure
Are spawning/breeding areas and other areas in need of conservation adequately protected at a regional/subregional level?
Is representative coastal and marine habitat protected
State
Has coastal and marine habitat loss been halted or reversed?
Has seagrass loss been halted or reversed?
Has mangrove loss been halted or reversed?
Has reef loss been halted or reversed?
Has coastal wetland loss been halted or reversed?
Has any other coastal and marine habitat loss been halted or reversed?
Has coastal and marine biodiversity loss been halted or reversed?
Status of vulnerable, threatened, endangered species (by category?)
Stakeholder Engagement
Are habitat degradation and biodiversity agreements well subscribed to?
Are country environmental agencies participating in regional/subregional habitat degradation processes
Are habitat conservation stakeholders participating in regional/subregional processes
Are country environmental agencies participating in regional/subregional habitat conservation processes

Guiding questions to be addressed by indicators
Are other regional IGOs participating in regional/subregional habitat conservation processes?
Are regional habitat conservation NGOs participating in regional/subregional processes?
Are regional environmental private sector bodies participating in regional/subregional habitat degradation processes?
Are regional environmental NGOs participating in regional/subregional habitat conservation processes?
Are biodiversity conservation stakeholders participating in regional/subregional processes
Are country environmental agencies participating in regional/subregional biodiversity conservation processes
Are other regional IGOs participating in regional/subregional biodiversity conservation processes?
Are regional biodiversity conservation NGOs participating in regional/subregional processes?
Are regional environmental private sector bodies participating in regional/subregional fisheries processes?
Are regional environmental NGOs participating in regional/subregional biodiversity conservation processes?
Social Justice
Do regional habitat degradation/biodiversity agreements include specific reference to disadvantaged groups and minorities?
Are the measures taken to reduce habitat degradation and biodiversity pressures socially just (differentially negatively impacting certain groups)
Human Well-Being
Has habitat protection benefitted human health
Has biodiversity conservation benefitted livelihoods
Has habitat/biodiversity protection resulted in improved access to recreational amenity areas
Has loss of cultural identity with coastal ecosystems and resources been reduced?

4.4 GEF Indicators for Ocean Governance

Guiding questions to be addressed by indicators
Architecture
Are arrangements in place to address overall ocean governance at regional/subregional levels?
Is there a mechanism for overall integration of regional/subregional policy cycles at the policy level?
Are there mechanisms in place to ensure national coordination and national-regional interaction?
Process
Is there regional/subregional policy in place for oceans?
Are there regional/subregional strategic plans in place for oceans?
Are there regional/subregional management plans in place for oceans?
Pressure
Have human pressures on coastal and marine ecosystems been reduced for the three issues
State

Guiding questions to be addressed by indicators
Has the health of coastal and marine ecosystems improved
Stakeholder Engagement
Are agreements well subscribed to?
Are stakeholders engaged in regional agreements
Has capacity to engage been assessed and built for NGOs and private sector fisheries, habitat, pollution, biodiversity?
Is information available and accessible for stakeholders to participate? fisheries, habitat, pollution, biodiversity?
Social Justice
Do regional oceans agreements include specific reference to disadvantaged groups and minorities?
Human Well-Being
Are marine-based livelihoods assured, jobs increased?
Has the contribution of shared living marine resources to national blue economy/total economy increased?
Has human health in coastal communities improved?
Has loss of cultural identity with coastal ecosystems and resources been reduced?

5 Connection to SOME E Report

The set of CLME+ SAP M&E indicators presented in this report will provide much of the basis for the CLME+ State of the Marine Ecosystems and Associated Economies (SOME E) Report. As indicated in Figure 1 and Table 1, the SOME E Report is intended to provide an accessible, picture for technocrats and decision makers. Therefore, it may include only a selection of key indicators from the M&E Framework as well as other contextual information that is not in the M&E framework but that help to develop a regional picture of marine ecosystem sustainability, its contribution to social and economic development in the region and the factors affecting it. The SOME E report will be updated periodically and will be aimed at supporting M and E and strategic planning at the level of the CLME+ ICM and its permanent successor.

6 Relationship of SAP M&E to SDGs

In September 2015, the international community adopted a set of Sustainable Development Goals (SDGs), including a dedicated Ocean SDG: “conserve and sustainably use the oceans, seas and marine resources for sustainable development” (SDG14)¹. The implementation of this SDG and related targets is first and foremost the responsibility of the national authorities. States must transpose these commitments into standards and policies, establish monitoring mechanisms and provide regular reporting on actions undertaken. In light of the transboundary nature of the marine environment and interdependencies between the Agenda’s targets and goals, the implementation of the Ocean SDG will however fall short of

¹ United Nations General Assembly. 2015. A/RES/70/1 - Transforming our world: the 2030 Agenda for Sustainable Development. Available online at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

the transformative ambition of the Agenda 2030 without effective coordination at the regional (multijurisdictional) level. The opportunity for countries in the region to use the strategies and actions identified in the CLME+ SAP to assist with the implementation of SDG 14 and to use the development and implementation of the M&E mechanism to meet both these requirements provides an important synergy between the SAP and SDG 14 implementation. This is reinforced by The United Nations General Assembly Resolution A/RES/70/1 which recognizes “the importance of the regional and subregional dimensions (...) in sustainable development” and draws attention to the regional level with regard to the follow-up and review process.

The CLME+ Project is focused on an Ecosystem Approach to governance of transboundary living marine resources in the CLME+ region. An ecosystem approach covers the full range of SDG14 targets, but with emphasis of target 14.c. As such, CLME+ SAP strategies and actions can draw from the already established targets and indicators being considered for SDG 14 implementation in the CLME+ region. For example, a preliminary informal survey by Fanning and Mahon of some 13 countries in the region identified an initial level of country priority for each of the SDG 14 targets. It is worth noting that while there is variability among the countries, Target 14.1 (reduce marine pollution) and Target 14.c (implement international law) received generally high priority scores as did Target 14.b (provision of access to small scale fishers to marine resources and markets) and 14.7 (increase economic benefits to SIDS). All of these targets relate to key objectives of the CLME+ SAP. While none of the SDG 14 targets received a very low level of priority in the country ranking, Target 14.3 (minimize and address the impacts of ocean acidification) received scores that signal cause for concern. Given the dependence of these countries on a healthy marine ecosystem that could be severely impacted by ocean acidification; especially coral reefs, it is essential that efforts be made to increase the awareness of the importance of this issue to all countries in the region. The M&E mechanism for the CLME+ SAP and the SOMEER reporting could play an instrumental role in bringing attention to this important issue. One explanation that has been offered for the low ranking is the current intangible nature of the consequences of ocean acidification, as compared, for example, to the very visible issue of marine pollution.

7 Conclusions and the way ahead

This report has outlined a GEAF based monitoring and evaluation framework for the CLME+ SAP. The framework comprises indicators in each of the seven GEAF categories for each of the three major issues as well as overall ocean governance. However, it should be borne in mind that application of the GEAF is intended to be at the policy and strategic levels. If the GEAF is applied at the operational level, then it inappropriately subsumes the role of management plan monitoring, which is the level where the detailed actions, and indicators for them, should be laid out.

Most of the pressure and state indicators will depend on the availability of data and information at the operational level from the respective IGOs across the entire region. Most of the indicators in the other categories will require compilation at the regional level (e.g. engagement in global and regional agreements) or from national statistics (e.g. income levels).

The baseline period is 2010-2015. Wherever possible, indicator values should be an average for the full five years. Where not possible a specific year or subset of years should be selected. It is assumed that

evaluation will be at an interval that is aligned with the periodicity of the strategy and planning cycles of the IGOs that constitute the PCM.

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ⁱ To assist with the development of the SAP M&E Plan, the Centre for Resource Management and Environmental Studies (CERMES) at the University of the West Indies (Cave Hill Campus, Barbados) has been contracted to deliver a prototype CLME+ ecosystem status and SAP implementation M&E mechanism, identified as Output 5.2 in the CLME+ SAP. Specifically relating to this output, CERMES has been tasked with delivering the following targets identified as 5.2.T1, 5.2.T2 and 5.2.T3 in the contract:

5.2.T1. SAP M&E Indicator set, monitoring approach and/or protocols as these relate to the seven governance indicator categories of the Governance Effectiveness Assessment Framework (GEAF) at the regional level.

5.2.T2. SAP M&E Indicator set, monitoring approach and/or protocols as these relate to governance architecture and process for four pilot projects of the CLME+.

5.2.T3. Inputs for the “State of the Marine Environment and Associated Economies (SOMEE)” reporting mechanism, as these relate to the state of marine resources/ocean governance in the CLME+ as derived in 5.2.T1 and 5.2.T2 (inputs will consist of chapters, sub-chapters and/or text sections in English for the written report, and materials for the related digital portals).

This report fulfills the deliverable requirements for targets 5.2.T1 and T2 which are understood to be the equivalent of the GEAF indicator set in Figure 2. It also provides a first draft of the indicators that will most likely contribute to the SOMEE indicators as per target 5.2.T3. CERMES will collaborate with the PCU in developing the SAP action M&E indicator set, the template for which is provided in Appendix 1.