

Socio-Ecosystem Diagnostic Analysis - Content, Structure and Guidelines

Overview of the Socio-Ecosystem Diagnostic Analysis (SEDA) process:

First and foremost it needs to be noted that this process is being modified from the existing standard TDA-SAP development and implementation process that has been tried-and-tested and refined over nearly three decades. This will be the first time it will have been modified for application beyond the traditional GEF 'transboundary' ecosystem (shared river basin, LME, lake, aquifer, etc.) context to an ecosystem context not involving national borders (e.g. in ABNJ).

In the context of the Sargasso Sea, the main technical role of an SEDA is to identify, quantify, and set priorities for environmental problems that threaten the long-term integrity and sustainability of the ecosystem. In particular, the SEDA aims to:

- A. Identify & prioritise the problems within the ecosystem.
- B. Gather and interpret information on the environmental impacts and socio-economic consequences of each problem.
- C. Analyse the immediate, underlying, and root causes for each problem, and in particular identify specific practices, sources, locations, and human activity sectors from which environmental degradation arises or threatens to arise.
- D. The root cause analysis is often accompanied by a comprehensive governance analysis since the underlying causes of the vast majority of environmental problems stem from selected policy and other governance failures and gaps.

Ultimately, the SEDA provides the **factual basis** for the formulation of a Strategic Action Programme but the SEDA is also part of a larger, facilitative process of engagement and consultation with all the key stakeholders from the initial SEDA steps through to the subsequent development of alternative solutions during the formulation of the Strategic Action Programme. The SEDA is a mechanism to help the participating stakeholders to 'agree on the facts'. Often, conflicts and disagreements are driven by perceptions and removing these can be an enormous step in itself. Furthermore, the SEDA should be seen as more than just an analysis of data and information. It is a powerful process that can help create confidence and trust among the partners involved and can actually create strong partnerships and interactions. Importantly, the process needs to capture experience from other TDA processes (see 'Large Marine Ecosystems and Sustainable Development: A review of Strategic Management Processes and Goals' 2017¹). Providers of information, as stakeholders, will need to help to define and establish principles and guidelines for Data and Information Management which will become an Appendix to the SEDA Document and which will address such issues as intellectual property, ownership, custodians, restrictions on commercial gain, quality control, etc. These data and information frameworks can in turn provide and inform the creation of monitoring frameworks for short, medium and long-term monitoring of SAP implementation progress.

¹ <http://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/global-environmental-finance/large-marine-ecosystems-and-sustainable-development--a-review-of.html>

Proposed Contents with appropriate guidance:

1. **Executive Summary:**
Needs to be an overall summary of the status of the Sargasso which captures all of the detailed science into one commentary. This should effectively be a Summary for Managers and Policy-Makers on the SEDA process and the conclusions prior to development of a SAP.
2. **Background & History:**
Brief background to the Sargasso Sea Commission; how this relates to BBNJ ILBI.
3. **SEDA Approach:**
Explanation of the TDA-SAP Approach and how this is modified to be the SEDA-SAP approach; Methodology – explanation of DPISR. Overall Objective and Activities to achieve this. Partner and Stakeholder Engagement (refer to Anex)
4. **The interim Management/System Boundary:**
The final definition of the Ecosystem Boundary can only realistically be agreed once all of the pertinent information on the ecosystem (including drivers and impacts which may lie external to these geographic boundaries) has been captured.
5. **Baseline Environmental Status:**
Current status regarding oceanography, productivity, fisheries, biodiversity, pollution, etc. Also needs a section to highlight interactions between, say, physical and chemical oceanography and productivity and then with socioeconomics such as food security and livelihoods. Each section needs to identify gaps that need to be addressed as well as ongoing monitoring needs to keep a handle on existing and emerging issues. Also need to consider interactions and impacts beyond the ecosystem boundaries, for example, land-based plastics pollution affecting the Sargasso. This capture of ‘interactive’ effects and influences also applies to some of the following sections.
6. **Baseline Socio-Economic Status**
This section will focus particularly on Industry and Livelihoods (fisheries, tourism, energy, mining, shipping, etc.). It will include an assessment of how the ecosystem is exploited by the various industries, how this is managed (Linking into the section below on Governance, Management, and Policy), what livelihoods the ecosystem supports, noting that important elements of many of these (such as glass eel fishery) may actually be outside of the ecosystem.
7. **Baseline Management, Policy and Governance (Legislation, institutional/administrative arrangements)**
Identifying the status quo on management and decision-making mandates and bodies that already exists (e.g. NAFO, ICCAT, IMO MEPC) including linkages into existing treaties. This section will also need to identify capacity shortfalls and requirements. The section will also identify the main entities that are supporting and/or undertaking scientific studies and data collection within the ecosystem. This section can be helpful in identifying possibilities for ‘anchoring’ the implementation and actions of a future SAP.
8. **Summary of Threats and Impacts (Pollution, Overfishing and IUU, climate change, exploitation, etc.)**

This section will list all of the impacts identified and their threats bearing in mind those threats may be multiple and spill into social or economic problems. This will form the basis for establishing what the root causes may be.

9. Connectivity Considerations

- a. Links between environmental impacts and socioeconomics
- b. Connectivity within the system boundary and across the system boundary (external)

10. Cross-cutting issues such as gender mainstreaming, poverty reduction, employment practices

- Links to SDG 14 and other SDGs
- Gender equality
- Threats to livelihoods
- Poverty-related concerns
- Environmental and social safeguards

11. DPSIR, to Causal Chain Analysis and Identification of Root Causes

The DPSIR (Driver-Pressure-State-Impact-Response) process will be an important and detailed undertaking here. This will aim to identify existing data on natural (physical, biochemical, ecological) and social (economic, regulatory, institutional, sociological) components. The output from the DPSIR approach will provide input to the standard Causal Chain Analysis that GEF requires as part of a diagnostic analysis of this nature. The Causal Chain Analysis will clarify the main threats and impacts (environmental, socioeconomic, etc.) back through their Immediate Cause (S) to their Root Cause(s) in order to identify which actions need to be taken to address/mitigate against the root cause. Very often the Root Causes lie at the Policy and Management Levels. The DPSIR activity being promoted through SARGADOM will provide valuable input and detail for this process while the final CCA provides a more 'accessible' summary and conclusion of the root problems to be addressed, allowing for a clearer justification of the specific actions that will go into the SAP.

12. Ecosystem Valuation

Ecosystem Valuation either as part of/ a chapter in the SEDA or as a separate follow-on document (N.B. IW:LEARN Manual on Economic Valuation of Ecosystems). This analysis can also inform the issue/threat prioritization exercise as well as the definition and promotion of actions required under the SAP

13. Cost Benefit Analysis

A Cost Benefit Analysis following on from the Ecosystem Valuation to demonstrate the value of a potentially more efficient collaborative stewardship approach (to include options and associated expectations for addressing the root causes and consequent impacts) in order to further justify the need for an effective SAP by examining the costs of both action and inaction. The CBA may also provide some initial 'thoughts' on sustainability of any monitoring/management/stewardship process that would later be expanded and defined in the SAP

14. Socio-Ecosystem Quality Objectives:

These will be based on how the partners and stakeholders would wish to see improvements in the ecosystem and associated socioeconomic linkages or even maintain the status quo against possible deteriorating conditions. They would need to be agreed and adopted by the

signatories to the final Strategic Action Programme. The ecosystem quality objectives might include a reduction in the number of shipping collisions with vulnerable species, or an improvement in a particular water quality parameter which is currently below acceptable levels for a health oceanic environment (e.g. a reduction in levels of a specific pollutant).

15. Monitoring Indicators

Based on the Causal Chain Analysis and the various impacts, select primary (priority) and secondary indicators that need to be monitored for change as well as to capture any new, emerging concerns. Such Indicators should also address the Ecosystem Quality Objectives as selected and agreed. In the broader TDA/SAP experience for shared waters systems, GEF has supported the development and monitoring of Process, Stress Reduction and Environmental & Socioeconomic Status Indicators and this framework can be applied for the Sargasso ecosystem. Where possible this section should also identify responsible parties and scheduling.

16. Marine Spatial Planning and Area Management Tools - Preliminary Recommendations

This is not necessarily intended to be a full MSP exercise but more capturing the potential/probably MSP expectations in order to guide the Cost Benefit Analysis. The aim would be to provide an initial overview of the spatial and temporal distribution of human activities in the Sargasso Sea Ecosystem boundary (taking into account also ecosystem effects emanating from outside the system boundary) in order to understand and aim to balance ecological, economic, and social aims and objectives (N.B. GEF LME:Learn Toolkit on Marine Spatial Planning). Appropriate ABMTs will also be identified.

17. Linkages to the Sustainable Development Goals

Identify any Links to the SDGS (SDG14 Oceans but also other 'linked' SDGs) arising the Ecosystem Valuation, MSP and Cost Benefit Analysis. This may or may not be practical at this stage depending on the information available. It should, however, form part of the justification of the SAP along with other relevant indicators and targets such as the Aichi targets as set by the Convention on Biological Diversity. Etc.

18. Final justification for the proposed Management/System Boundary for a SAP

Although the SEDA process will have adopted an 'interim' boundary for the ecosystem, the information gathered during the SEDA may suggest modifying this boundary for management/stewardship purposes when developing and implementing the SAP, or it may confirm it. Can the area that has been studied and analysed thought this SEDA be treated as a single system for management/stewardship purposes? Obviously, there are no clear 'permanent' boundaries around a large and highly dynamic ecosystem of this nature. As in the sections above, there needs to be a consideration of the external impacts on the ecosystem as the Sargasso clearly cannot be treated as an isolated ecosystem.

19. The Socio-Ecosystem Analysis Knowledge and Data Gaps

Identification of the current data and knowledge gaps along with proposed sources and potential providers of information

Appendices:

- I. Communications and Stakeholder Participation Plan
- II. Data and Information Policy and Management Plan
- III. Areas of Concern, Ecosystem Quality Objectives, Actions, Targets and Indicators for the Strategic Action Programme
- IV. The status of ratification of conventions and agreements pertaining to the Sargasso Sea Ecosystem
- V. Results of the stakeholder prioritisation of areas of concern
- VI. DPSIR flow-chart
- VII. Causal Chain Analysis Matrix.
- VIII. Bibliography of information and data used for the SEDA