



Strategic Environmental Assessment (SEA)



A strategic thinking framework for achieving sustainable development

based on lectures delivered by Maria Partidario



The Secretariat of the Convention on Biological Diversity wishes to thank Professor Maria Partidario, CEG-IST, Instituto Superior Técnico, Universidade de Lisboa, Portugal for providing the substantive content for this module. The Secretariat also wishes to thank the Ministry of Oceans and Fisheries of the Government of the Republic of Korea for its financial support for the production of this module and Mr. Thomas Lundy for his work in translating the substantive content into this module format.



Contents

Introduction.....	4
Overview.....	5
Why SEA is Relevant.....	6
Pressures on Marine Biodiversity	7
Marine Ecosystem Value Chain.....	8
Marine Spatial Planning and Strategic Environmental Assessment.....	9
Dominant approaches to SEA	9
Integrated Marine and Coastal Management.....	9
What is Strategic Thinking for Sustainability (S4TS) (Partidário 2007)?.....	10
Key features.....	11
Creating development contexts	11
Critical Decision Factors	12
Mapping CDF	12
How can Strategic Thinking SEA for Sustainability (S4TS) enable Integrated Marine and Coastal Planning and Managment?	13
Coastal and Marine ecosystems.....	13
How can SEA (ST4S) Help?	14
Case Study: Coastal Development Strategy in Mozambique.....	16
The Drivers	16
Using SEA in Mozambique	16
Coastal Development Strategy in Mozambique: Critical Decision Factors	17
Coastal Development Strategy in Mozambique: Outcome	18
Summary	19
References	20





Introduction

Welcome to the Sustainable Ocean Initiative training guide on Strategic Environmental Assessment (SEA). This training guide aims to address SEA as a strategic thinking framework for achieving sustainable development.

It focuses on how to use SEA as a strategic instrument and the benefits it can bring to the policy and planning decision processes.



Overview

The content of this guide will revolve around 3 main points:



Why is SEA for sustainability relevant to marine and coastal planning and management?



What is strategic thinking for sustainability in SEA?



How can strategic thinking for sustainability in SEA enable integrated marine and coastal planning and management?



Why Strategic Environmental Assessment (SEA) is Relevant

Why is SEA for sustainability relevant in Marine and Coastal planning and management?



Marine and coastal planning and management involve highly complex decision processes, with multiple and often conflicting decisions. Strategic thinking SEA can be helpful for 3 reasons:



The long-term consequences involved in complex decision-making.



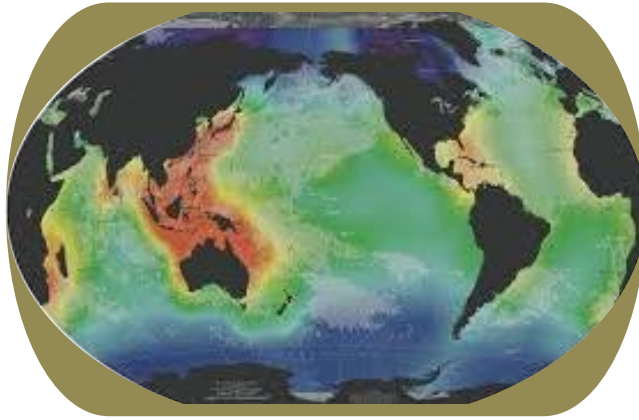
Factors such as space and time scales, different sectors, stakeholders, and targets.



The multiple objectives and expectations associated with marine and coastal planning and management systems.



Pressures on Marine Biodiversity



Census of Marine Life/ National

There are multiple and interacting pressures on marine biodiversity that exist today. Each one adds to the strain on marine biodiversity around the world: (Jihyun Lee, 2017)



Unsustainable fishing practices



Ocean acidification



Unsustainable coastal development



Ocean warming



Habitat loss



Sea-level rise



Land- & sea-based pollution



Deoxygenation



Eutrophication



Invasive species & diseases



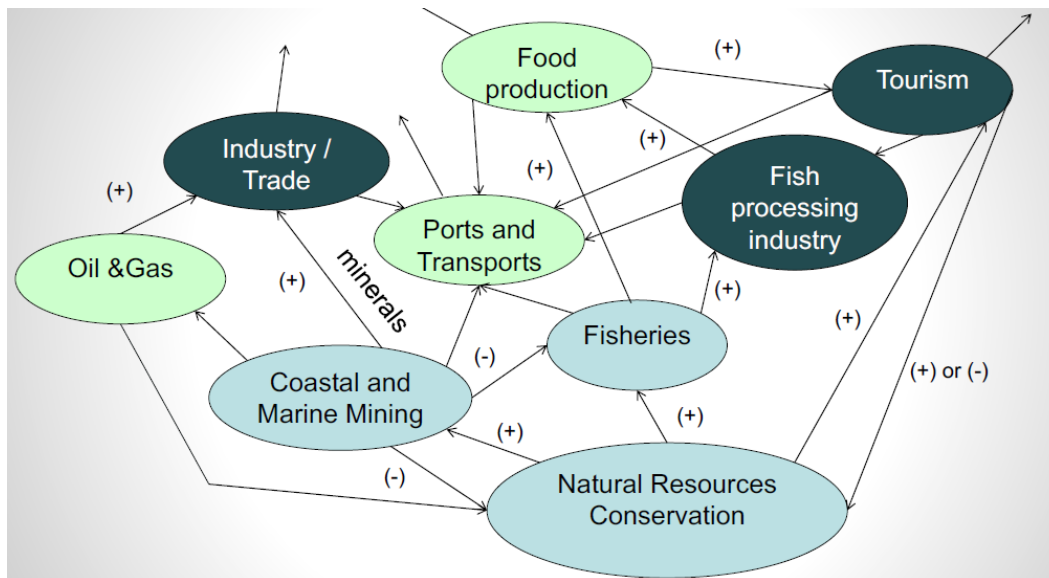
Marine debris



Underwater noise



Marine Ecosystem Value Chain



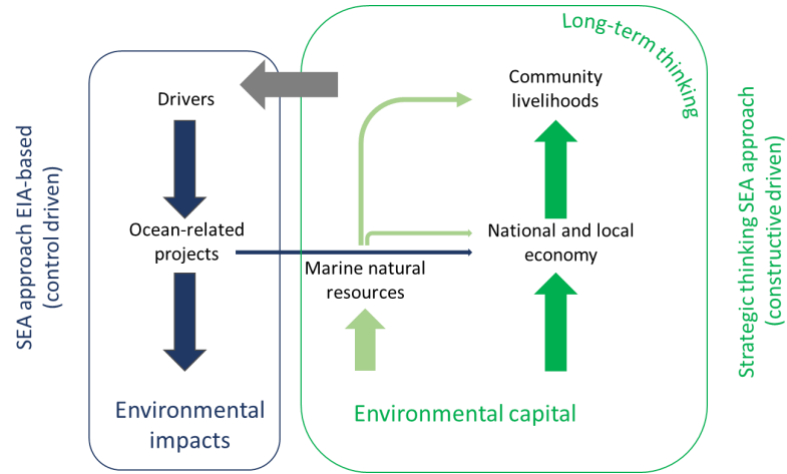
The above image is a sub-section of the Marine Ecosystem Value Chain and illustrates the network across interacting resources and activities, the multiple links, objectives and priorities that eventually culminate in pressures acting upon the marine environment and marine biodiversity.



Dominant approaches to SEA

There are two dominant approaches to SEA:

1. EIA-based SEA. In other words, conducting an impact assessment using traditional thinking that is control-driven.
2. Strategic thinking for sustainability (ST4S). ST4S uses long-term thinking and is constructively driven as it tries to promote a positive and sustainable use of the environmental assets, such as natural and social resources as environmental capital. It promotes a range of national and local economic activities, as well as the promotion of community livelihoods, thus creating better conditions for the sustainable development of projects that will eventually be assessed with EIA.



Integrated Marine and Coastal Management

Strategic thinking for sustainability in SEA can thus enable integrated marine and coastal planning and management and assist the development of marine spatial planning, exploring planning options and focusing on strategic relevant aspects.



Marine Spatial Planning

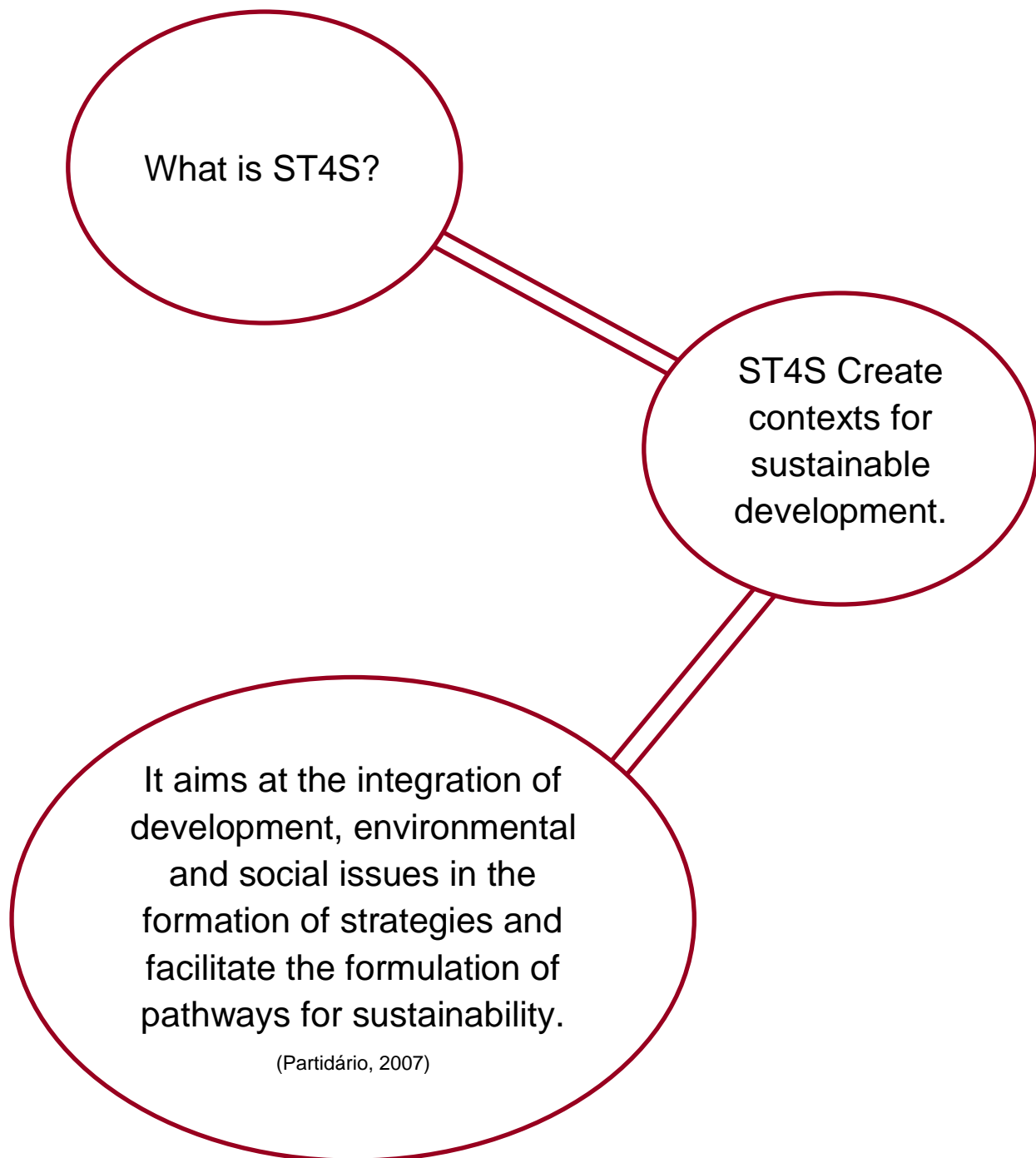


Strategic Environmental Assessment and EBSAs

Strategic thinking for sustainability in SEA works together with marine spatial planning to enable the identification of Ecologically or Biologically Significant Marine Areas (EBSAs, assess how these can be impacted by different activities, and which tools can be used in effective implementation of these areas.



What is Strategic Thinking for Sustainability (ST4S) (Partidário 2007)?



Key features

The ST4S model is supported in three key features: (Partidário, 2007, 2012)



1. Future thinking driven by key success factors. These critical decision factors are used as strategic points in a system of interlinking components.



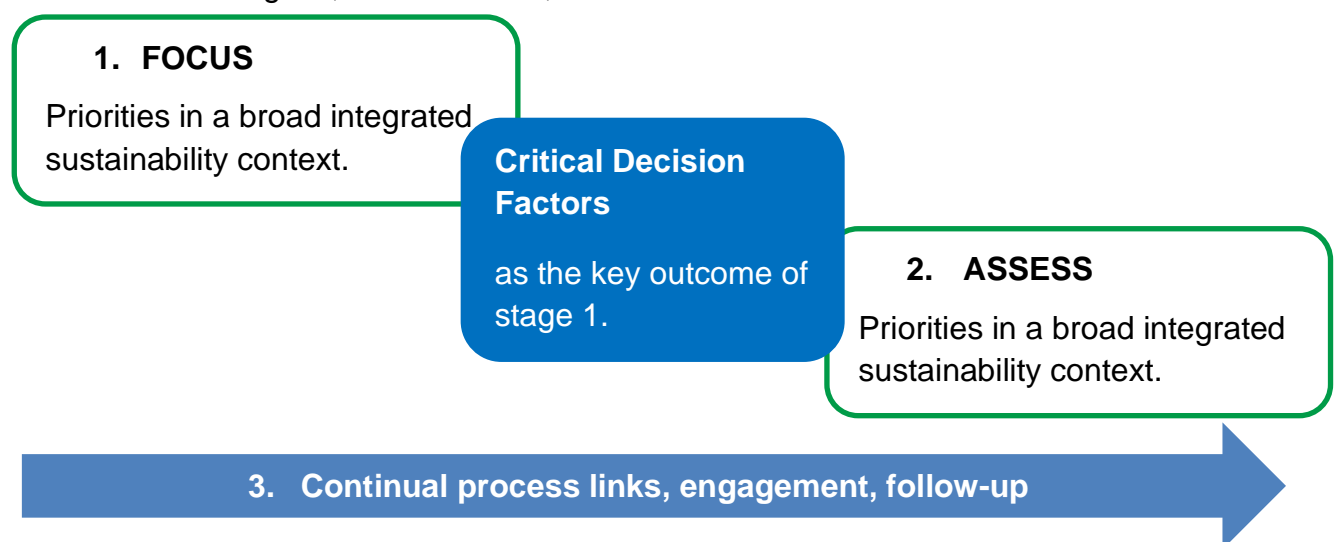
2. Pathways for sustainability. This is achieved by options assessment (i.e., risks and opportunities) leading to the selection of the options that have better chances of enabling a transition towards sustainability.



3. Continuing dialogues between processes and people (actors' networks), throughout decision cycles.

Creating development contexts

The essence of the SEA strategic thinking methodology for sustainability (ST4S) includes three stages: (Partidário, 2007, 2012)



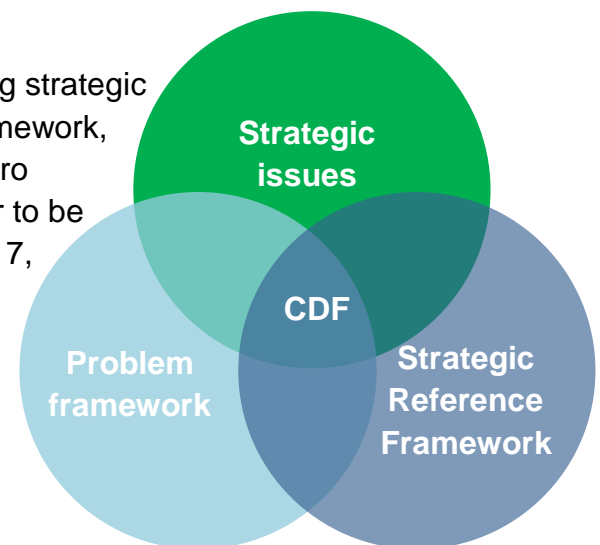
Critical Decision Factors

Critical Decision Factors (CDF) are integrated holistic factors that represent priorities for strategic decisions with the purpose of ensuring sustainable outcomes in the long-term. They act as strategic leverage points in overall nerve system and recognize the interconnectivity of various systems. They also set the assessment framework by providing assessment criteria and indicators. CDF are key to ensuring a strategic focus. The process of defining the CDF is represented in the diamond diagram below.



Mapping CDF

To map CDF, you must cross-relate the policy or planning strategic issues, the environmental and sustainability problem framework, and the strategic reference framework based on the macro policies that set a referential for the assessment. In order to be effective, the number of CDF should stay between 3 and 7, ideally 3 or 4, and be supported by assessment criteria and indicators. For further information on this methodology, please refer to Partidário 2012.

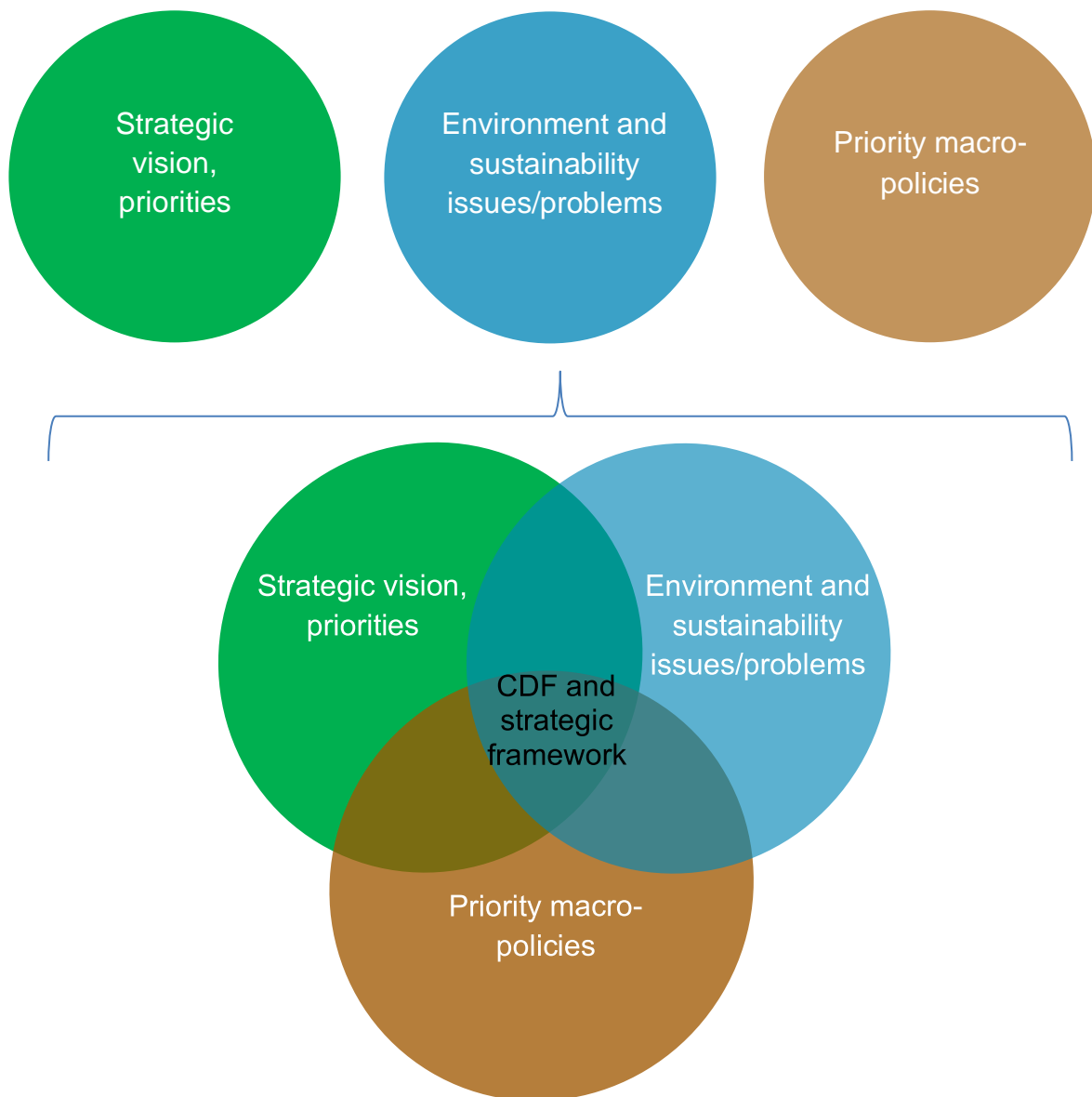


Strategic Thinking SEA for Sustainability (ST4S) to Enable Integrated Marine and Coastal Planning and Management

We have defined what strategic thinking SEA for sustainability (ST4S) is and why it is necessary, now let's explore how this SEA approach can enable Integrated Marine and Coastal Planning and Management.

Coastal and Marine Ecosystems

Start by asking: What is the Focus? Combining:



How can SEA (ST4S) Help?

FOCUS

The first contribution (and first stage) of ST4S SEA is to establish the strategic focus.

For example, on the topic of marine development potential, try asking the following questions:

- How can we take advantage of the potential offered by marine resources (opportunities) WITHOUT putting current and future sustainable uses at risk?
- What is critical?
- What is strategic?

Critical decision factors will help represent this strategic focus.

ASSESS















Next, look for strategic options in using, exploring, generating benefits based on marine resources and assess risks and opportunities. Then, provide guidelines for follow-up.



Including Sustainable Development Goals (SDGs) and Aichi Biodiversity Targets in the Framework

In building the strategic reference framework it is important to include the SDG and the Aichi Biodiversity Targets as part of the macro-policies setting the referential for assessment. The Aichi Targets are reflected in several SDGs. See below which targets are reflected in which SDGs.

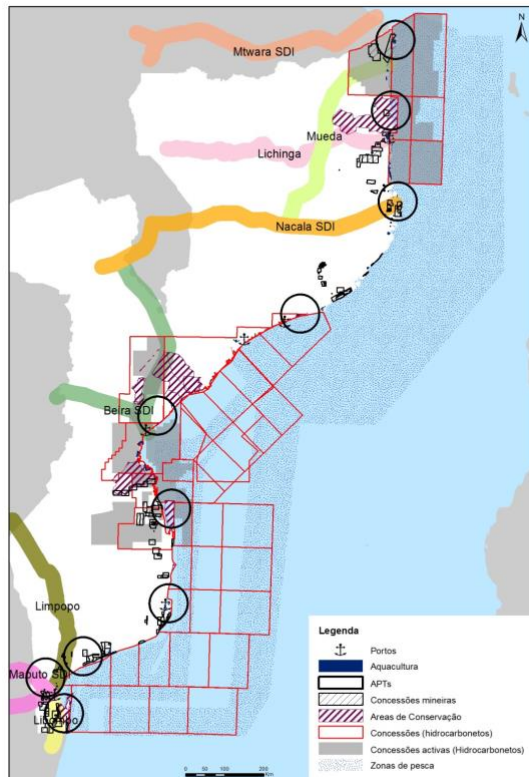


SDG 14 Targets	Highly Relevant Aichi Biodiversity Targets
14.1: “By 2025, prevent and reduce marine pollution ...”	
14.2: By 2020, sustainably manage and protect marine and coastal ecosystems including by strengthening their resilience , and take action for their restoration ...”	 
14.3: “Minimize and address the impacts of ocean acidification ...”	
14.4: “By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing ...”	
14.5: “By 2020, conserve at least 10 per cent of coastal and marine areas ...”	
14.6: “By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing...”	 
14.7: “By 2030, increase the economic benefits to Small Island developing states and least developed countries from the sustainable use of marine resources...”	  
14.a: “ Increase scientific knowledge , develop research capacity and transfer marine technology ...”	
14.b: “ Provide access for small-scale artisanal fishers to marine resources and markets”	
14.c: “Enhance the conservation and sustainable use of oceans and their resources by implementing international law ...”	



Case Study: Coastal Development Strategy in Mozambique

Let's look at this case study, detailing a coastal development strategy in Mozambique.



The Drivers

The relevant drivers in this case are:

- Increasing pressures on coastal natural resources giving rise to conflicts
- Rapid response to urgent situations, while keeping perspective on the long-term sustainable development objectives for the coastal zone

Who asked for the study:

- Ministry of Environment (MICOA)
- Donor funded

Using SEA in Mozambique

Problem framework (developed on 2012.01.20)		
Major problems	Major Sensitivities	Major opportunities
High competition for the resources <ul style="list-style-type: none"> - Energy: Oil and gas, wind power - Mining: heavy sands, sand dune mining - Tourism - Fisheries (industrial and semi-industrial, artisanal) - Aquaculture - Agriculture - Forestry - Transports (ports, maritime transportation, rail and road infrastructures) - Urban development (cities in the coastline) - Industries and infrastructures (including access to the coast) - Salt exploration 	Sensitive ecosystems/habitats (legally protected conservation areas and species or not) <ul style="list-style-type: none"> - Mangroves - Estuaries - Seagrass beds - Fresh water lakes - Wetlands - Dunes - Islands - Coral reefs - beaches - Fish banks (Sofala bank) Fishing stocks - Biodiversity hotspots Culture heritage <ul style="list-style-type: none"> - Archaeology - Built heritage - Religion and traditions 	Natural and social resources based activities through sustainable planning and management <ul style="list-style-type: none"> - Capitalize on the resilient segments of the coast line - Capitalize existing natural resources (eg O&G) in those areas where it can be readily accommodated - Investment share on environmental conservation (either though legal requirement or not) - Improve the environment to generate wealth - to generate skills and linked employment opportunities - Tourism opportunities based on the uniqueness of coastal resources (sailing Mecca (young, active) and other coastal recreational activities (warm and calm waters – in the shelter of)) - Tourism and visitors diversification (eg community based tourism, specialist tours for tourism) - Natural deep water areas that offer opportunity for harbors, aquaculture - Geostategy
Population concentrated on coastal area and living on natural resources <ul style="list-style-type: none"> - Sustainability of livelihood <ul style="list-style-type: none"> o Viability of traditional activities o Natural Resources management (including viability of natural resources harvesting activities: agriculture, fisheries, logging) o Land tenure systems o Land occupation - Leadership, ownership - Capacities (knowledge, action) - Community structure (age, professional, ethnical) - Vulnerability to disasters, exposure to risk - Social interactions <ul style="list-style-type: none"> o Migration and cultural mix o Rituals 	Risks <ul style="list-style-type: none"> - Erosion (including coastal erosion) - Flooding - Change in water temperatures - Droughts - Sea level rise - Tropical storms - Fluctuation of fish stocks - Storm water run-off - Activities in the catchments - Slash and burn agriculture - Wood harvesting - Over-harvesting of marine species - Pollution - Governance, gaps or overlaps, power sharing - Political commitment, ownership 	Environmental and cultural assets and unique values create economic advantage and competitiveness <ul style="list-style-type: none"> - Increase satisfaction in livelihoods and lifestyles rather than change it - Research and knowledge building, creating inventory - Capitalize on uniquenesses - The Indian ocean maritime history - Bush and beach opportunities

A problem framework was created detailing the major problems, major sensitivities, and major opportunities associated with the development.



Coastal Development Strategy in Mozambique: Critical Decision Factors

CDF 1 – Resources integrity and uniqueness

- Preservation of relevant and unique values (natural and cultural)
- Valuation of ecosystem services
- Coastal ecosystems resilience to pressures
- Socio-ecological systems



CDF 2 - Livelihood sufficiency and opportunity

- Wealth of local communities and businesses
- Communities well-being and healthy conditions
- Food safety
- Clean water, soils and coastal stability
- Economic opportunities



CDF 3 - Coastal safety and risks

- Vulnerability to climate change
- Regional and local social imbalances
- Terrorism, piracy and illegal harvesting
- Environmental and Technological risks



CDF 4 - Pressure, conflict, and governance

- Institutional cooperation and shared responsibility
- Stakeholder engagement processes
- Investment pressures conflict management
- Corporate-community partnerships



Photographs provided by Maria Partidario



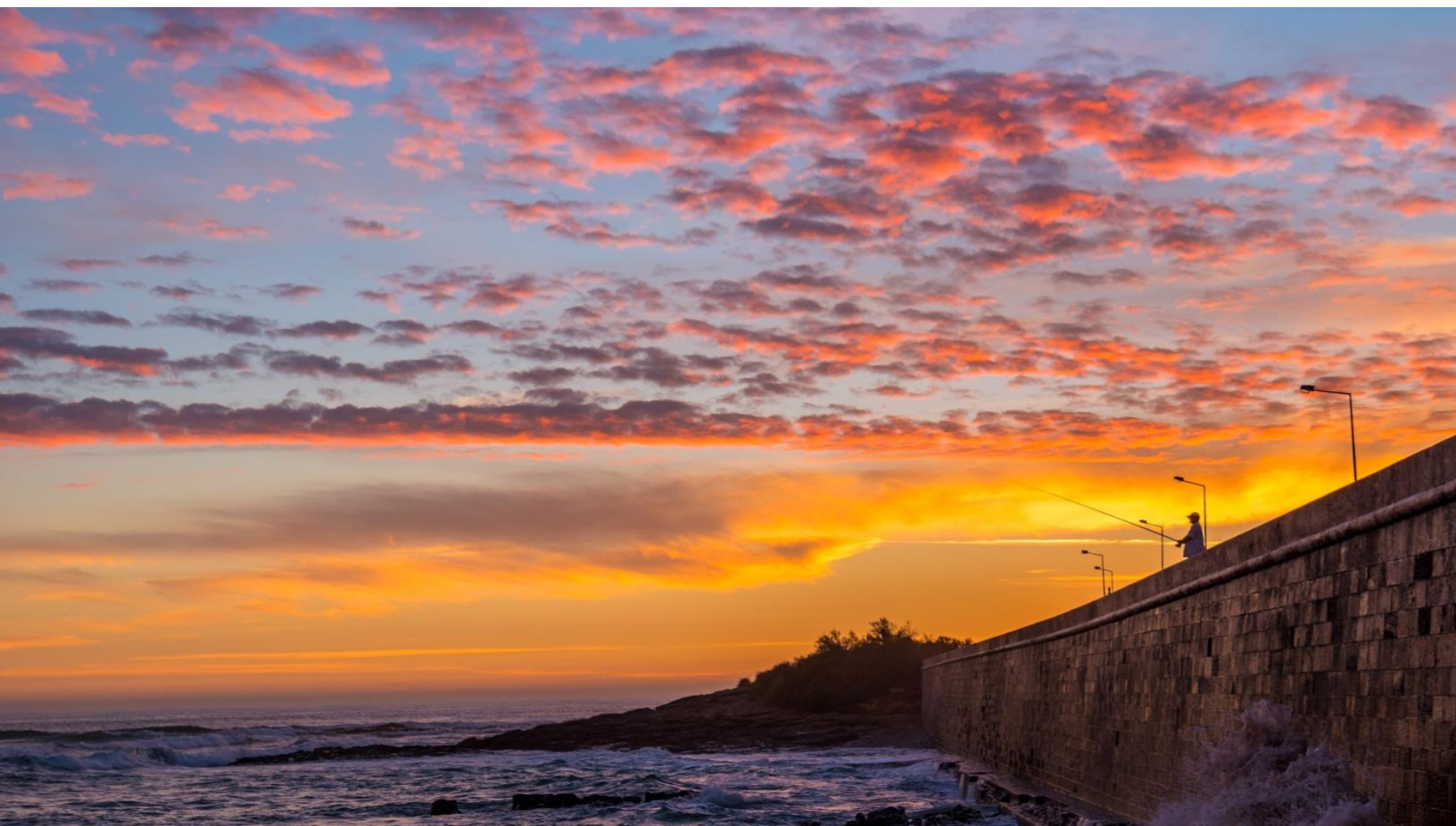
Coastal Development Strategy in Mozambique: Outcome

Once the Critical Decision Factors were established the SEA could have continued to work with the Integrated Coastal Strategy to explore planning options that would enable more sustainable outcomes, and propose guidelines for development, namely to be used in projects EIA.

Instead, the budget allocated to SEA was used to build detailed environmental profiles as baselines to characterize the state of social and environmental issues in the various districts along the coast. This information has never been made public, and the SEA was never completed, nor the Integrated Coastal Management Strategy.

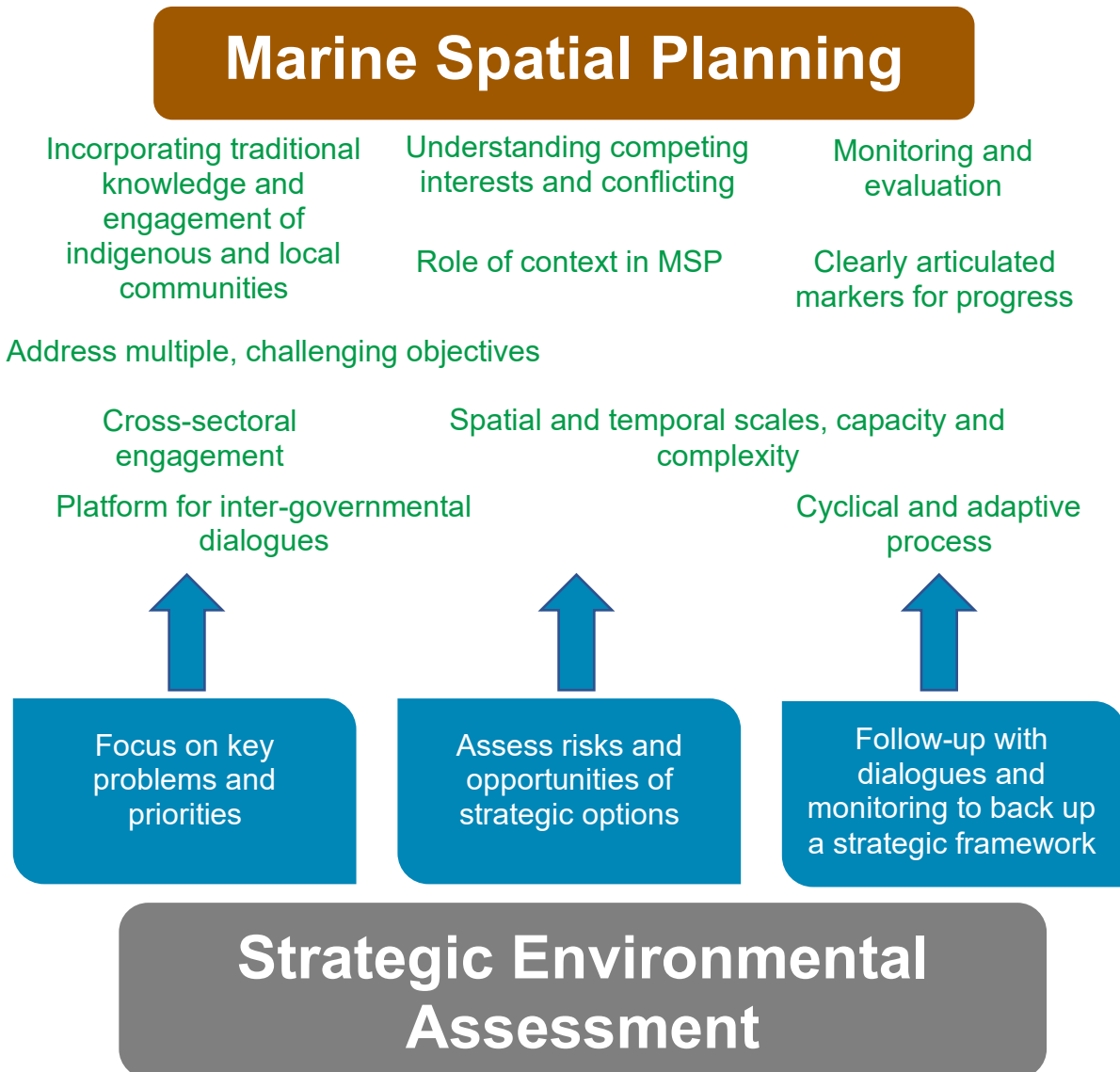
Learning points

In SEA, don't try to collect all baseline information – otherwise you risk not being able to assist decision-making with a strategic analysis and assessment for lack of time and resources. Meanwhile, project development in the coastal area continues in the absence of a strategy and planning framework that can establish the sustainability boundaries for development.



Summary

SEA can contribute to marine spatial planning in several ways:



Concluding why and how to use the ST4S Methodology and the CDF

Why?

- It helps address complex situations
- To be strategic is to be selective
- SEA can bring an added value to planning decisions and processes

How?

- It creates capacities
- It changes practices
- It addresses values rather than problems
- It seeks opportunities
- It starts with long-term and broad context
- It uses strategic and systems thinking

References

Lee, Jihyun 2017. Context of the workshop: MSP as a tool for Achieving Aichi Biodiversity Targets. Sustainable Ocean Initiative Capacity-Building Workshop for the Wider Caribbean and Central America, San José, 20 to 24 February 2017.

Partidário M.R. 2007. Strategic Environmental Assessment Good Practices Guide – Methodological Guidance. Agência Portuguesa do Ambiente.

Partidário M.R. 2012. Strategic Environmental Assessment Better Practice Guide – Methodological Guidance for Strategic Thinking in SEA. APA and REN.



Convention on Biological Diversity (CBD)

Opened for signature at the Earth Summit in Rio de Janeiro in 1992, and entering into force in December 1993, the Convention on Biological Diversity is an international treaty for the conservation of biodiversity, the sustainable use of the components of biodiversity and the equitable sharing of the benefits derived from the use of genetic resources. With 196 Parties, the Convention has near universal participation among countries. The Convention seeks to address all threats to biodiversity and ecosystem services, including threats from climate change, through scientific assessments, the development of tools, incentives and processes, the transfer of technologies and good practices and the full and active involvement of relevant stakeholders including indigenous and local communities, youth, NGOs, women and the business community. The Cartagena Protocol on Biosafety and the Nagoya Protocol on Access and Benefit Sharing are supplementary agreements to the Convention. The Cartagena Protocol, which entered into force on 11 September 2003, seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology. To date, 172 Parties have ratified the Cartagena Protocol. The Nagoya Protocol aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies. It entered into force on 12 October 2014 and to date has been ratified by 124 Parties.

