



MARINE SPATIAL PLANNING AND INTEGRATED COASTAL ZONE MANAGEMENT APPROACHES TO SUPPORT THE ACHIEVEMENT OF SUSTAINABLE DEVELOPMENT GOAL TARGETS 14.1 AND 14.2

Conceptual Guidelines

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Contents

- Abbreviations 4
- 1 Executive Summary 6
- 2 Introduction 7
 - 2.1 Area-based management approaches 7
 - 2.2 Area-based management approaches in a global context 8
 - 2.3 Aim of these conceptual guidelines 8
- 3 Key elements of Marine Spatial Planning and Integrated Coastal Zone Management .. 10
 - 3.1 Identification of key elements of Marine Spatial Planning and Integrated Coastal Zone Management 10
- 4 Applying area-based management approaches to Sustainable Development Goal Targets 16
 - 4.1 Applying an Integrated Coastal Zone Management approach to support the delivery of Sustainable Development Goal 14.1 on pollution control..... 18
 - 4.2 Applying a Marine Spatial Planning approach to Sustainable Development Goal 14.2 21
- 5 Case Studies..... 24
 - 5.1 Integrated Coastal Zone Management and Marine Spatial Planning in the Baltic: A Case Study..... 25
 - 5.2 Integrated Coastal Zone Management in China..... 32
 - 5.3 Integrated Coastal Zone Management and Marine Spatial Planning in Croatia: A Case Study..... 38
 - 5.4 Marine Spatial Planning in Indonesia: A Case Study 41
 - 5.5 Integrated Coastal Zone Management and Marine Spatial Planning in Montenegro: A Case Study..... 45
 - 5.6 Integrated Coastal Zone Management in the Philippines: A Case Study..... 50
- 6 Conclusion..... 54
- Annex 1..... 56

Abbreviations

ABMT	Area-Based Management Tool/Approach
ABNJ	Areas Beyond National Jurisdiction
APEI	Area of Particular Environmental Interest
BOBLME	Bay of Bengal Large Marine Ecosystem
CBD	Convention on Biological Diversity
CTI-CFF	Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security
CZMAI	Coastal Zone Management Authority and Institute
EBM	Ecosystem-Based Management
EC	European Commission
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FKNMS	Florida Keys National Marine Sanctuary
ICZM	Integrated Coastal Zone Management
IRBM	Integrated River Basin Management
IMO	International Maritime Organization
ISA	International Seabed Authority
IOC-UNESCO	Intergovernmental Oceanographic Commission of United Nations Educational, Scientific and Cultural Organization
IUU	Illegal, Unreported and Unregulated fishing
LMMA	Locally Managed Marine Area
MAP	Mediterranean Action Plan
MARPOL	International Convention for the Prevention of Pollution from Ships
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MSFD	Marine Strategy Framework Directive (of the European Union)
MSP	Marine Spatial Planning
NAP	National Adaptation Plan
NBSAP	National Biodiversity Strategies and Action Plan
NDC	Nationally Determined Contributions for climate change

NEAFC	North-East Atlantic Fisheries Commission
PAP/RAC	Priority Actions Programme/Regional Activity Centre
PCZM	Patagonian Coastal Zone Management
PERSGA	Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden
PNCIMA	Pacific North Coast Integrated Management Area
PSSA	Particularly Sensitive Sea Area
SAP	Strategic Action Programme
SDG	Sustainable Development Goal
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Seas
UN Environment	United Nations Environment
UN Environment/MAP	UN Environment Mediterranean Action Plan
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
VME	Vulnerable Marine Ecosystem

1 Executive Summary

This document is part of a series¹, funded by the European Commission and produced by the UN Environment World Conservation Monitoring Centre, supported by UN Environment, which aims to evaluate the applications of area-based management approaches to the achievement of the Sustainable Development Goals. An area-based (or spatial) management approach enables the application of management measures to a specific geospatial area to achieve a desired policy outcome. In particular, this report identifies ways in which practitioners and decision-makers can apply Marine Spatial Planning and Integrated Coastal Zone Management approaches to support the delivery of Sustainable Development Goals 14.1 relating to the reduction of marine pollution and 14.2 relating to sustainable management and protection of marine and coastal ecosystems. Evidence of successful application of Marine Spatial Planning and Integrated Coastal Zone Management to support delivery of Targets 14.1 and 14.2 has been analysed from experiences from around the world to identify different phases that should be considered by practitioners and decision makers. A conceptual guidelines diagram is presented in Section 4, highlighting each of the phases that can be taken by practitioners. Each phase is supported by evidence extracted from in-depth case studies, collected from interviews with on-the-ground practitioners and presented as full case studies in Section 5. This document serves as a guide to facilitating the effective application of Marine Spatial Planning and Integrated Coastal Zone Management approaches to support the delivery of Sustainable Development Goals 14.1 and 14.2.

¹ The accompanying documents can be found at: wcmc.io/oceansdgs_technicalreport and wcmc.io/oceansdgs_summary

2 Introduction

This report provides guidance on how area-based management approaches can support the delivery of Sustainable Development Goal 14 'Life Under Water'. There are a variety of approaches used for planning activities in the marine environment. Specifically, this report outlines conceptual guidelines for the application of Marine Spatial Planning and Integrated Coastal Zone Management approaches to support the delivery of Sustainable Development Goal Targets 14.1 and 14.2 (detailed below). These conceptual guidelines were developed by identifying key elements for each approach, and are grounded in practical evidence and experience from selected case studies.

Focal Sustainable Development Goals Targets:

Target 14.1 - By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

Target 14.2 - By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience and take action for their restoration, to achieve healthy and productive oceans

2.1 Area-based management approaches

A marine or coastal area-based (or spatial) management approach enables the application of management measures to a specific marine area to achieve a desired policy outcome. At present, a wide variety of area-based management approaches are in use, each with their own purpose, mandate, guiding authority or application guidance. Some approaches focus on the management of individual maritime sectors operating in a specific area, such as fisheries closure areas, pollution management zones, and seabed mining exclusion areas. Other approaches, such as Marine Spatial Planning (MSP) and Integrated Coastal Zone Management (ICZM), seek to coordinate and balance the needs of several types of activity within the same area. Methods of area-based management, particularly those relating to a specific sector, can be thought of as 'tools', but in this report, the term 'approaches' has been used as it encompasses a wide range of methods, including those that are cross-sectoral and wider scale in nature.

Regulation of marine or coastal activities using an area-based management approach may be required for a number of reasons. Examples include: the support of blue growth² and sustainable development; the conservation of critical habitats or marine features, such as coral reefs or seamounts; and to align with provisions or requirements set out in national or

² "Blue Growth is the long-term strategy to support sustainable growth in the marine and maritime sectors as a whole" ([European Commission, 2018](#)).

regional policies and legislation. The application of area-based management approaches can therefore have a variety of origins. For example, national policies may establish area-based management approaches to address particular issues such as unsustainable resource use, or as part of national or sub-national management processes to balance the needs of many sectors. As such, these types of approach are being increasingly recognised as mechanisms to support the conservation and sustainable use of marine and coastal resources.

2.2 Area-based management approaches in a global context

Area-based management approaches may also be implemented to advance the goals of international or regional conventions and agreements, including the Convention on Biological Diversity (CBD)³, United Nations Convention on the Law of the Sea (UNCLOS)⁴ or the United Nation's 2030 Agenda for Sustainable Development which sets out 17 Sustainable Development Goals (SDGs) and 169 associated Targets. The use of specific marine and coastal area-based management approaches is guided by such global and regional agreements, and commitments for their implementation are reiterated in many international processes.

In the words of the 2030 Agenda for Sustainable Development, its Goals and Targets "*are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental*"⁵. Area-based management approaches can address each of these three dimensions and contribute towards the delivery of SDG Targets through the application of integrated approaches which aim to provide considered and balanced management of marine and coastal activities.

2.3 Aim of these conceptual guidelines

The aim of this report is to review how the use of the area-based management approaches can contribute towards the delivery of Sustainable Development Goals and Targets⁶ and develop relevant, evidence-based conceptual guidelines for their application. The term 'conceptual guidelines' is used throughout this document to encapsulate the framework that has been developed to suggest how area-based management approaches and policy goals could be linked. As far as possible, each phase of this framework is grounded in evidence from different case studies which, when combined, create a practical pathway to support governments and practitioners in implementing Marine Spatial Planning or Integrated Coastal Zone Management approaches to support delivery of Sustainable Development Goal

³ Further information about the Convention on Biological Diversity can be found at: www.cbd.int

⁴ For more information about the United Nations Convention on the Law of the Sea (UNCLOS), see: http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

⁵ The 2030 Agenda for Sustainable Development can be found at: <https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>

⁶ For more detail on the variety of SDG Targets that can be delivered, see: wcmc.io/oceansdgs_technicalreport

14.1 relating to marine pollution and 14.2 relating to sustainable management and protection of marine and coastal ecosystems. In some cases, innovative thinking identified mechanisms to be included within the guidance to bridge the gaps between the existing experiences.

This document identifies and explores the key elements of Marine Spatial Planning and Integrated Coastal Zone Management approaches, and how such elements can support the delivery of Sustainable Development Goals 14.1 and 14.2 throughout these phases⁷.

This document is comprised of three sections:

- **Key elements of Marine Spatial Planning and Integrated Coastal Zone Management** – an analysis identifying key elements of Marine Spatial Planning and Integrated Coastal Zone Management area-based management approaches, and the linkages to Sustainable Development Goal Targets 14.1 and 14.2;
- **Conceptual guidelines for the application of Integrated Coastal Zone Management and Marine Spatial Planning approaches to Sustainable Development Goal Targets 14.1 and 14.2, respectively** – illustrative guidelines showing the application of each approach to the related SDG Target, including supporting material from case studies; and
- **Case studies** – practical-evidence from around the world demonstrating application of approaches to support the delivery of Sustainable Development Goal Targets 14.1 and 14.2.

For more information and the full technical report, please refer to the 2018 UN Environment report entitled [*The Contributions of Marine and Coastal Area-Based Management Approaches to Sustainable Development Goals and Targets*](#).

⁷ More information is available at: <https://sustainabledevelopment.un.org/sdg14>

3 Key elements of Marine Spatial Planning and Integrated Coastal Zone Management

3.1 Identification of key elements of Marine Spatial Planning and Integrated Coastal Zone Management

In order to understand the key elements of Marine Spatial Planning and Integrated Coastal Zone Management, and the linkages to Sustainable Development Goal Targets 14.1 and 14.2, an in-depth literature review of existing policy documents, recommendations, and scientific reviews relating to Marine Spatial Planning and Integrated Coastal Zone Management at the national, regional and international level was undertaken. A full list of documents reviewed can be found in Annex 1.



Key principles, processes, underpinning concepts and objectives were identified from each source, and were analysed to identify key elements which were common across different sources. Key objectives listed for each approach are provided in Table 1 below. From the literature and sources reviewed, there was a greater degree of variation in the objectives of Marine Spatial Planning approaches than there was for Integrated Coastal Zone Management approaches.




Table 1: Primary objectives of Marine Spatial Planning and Integrated Coastal Zone Management, identified from different literature sources (see Annex I for further details).




Marine Spatial Planning	Integrated Coastal Zone Management
<ul style="list-style-type: none"> ▪ A framework for consistent, transparent, sustainable and evidence-based decision making; ▪ Sustainable development and use of marine and coastal space and resources; ▪ Preservation, protection and improvement of the environment/conservation and recovery of ecosystems, including resilience to climate change impacts; ▪ An integrated framework for management (notably acting as a guide but not replacing single sector planning); ▪ Identification of sites for development, use and protection; ▪ Enabling a sustainable economy and a strong, healthy and just society within environmental limits; ▪ Planning and regulatory efficiency. 	<ul style="list-style-type: none"> ▪ Sustainable development; ▪ Sustainable management of natural resources; ▪ Sustainability of human activities; ▪ Protection of ecosystems (including integrity and functioning); ▪ Preservation, protection and improvement of the environment/conservation and recovery of ecosystems, including resilience to climate change impacts; ▪ Enabling a sustainable economy and a strong, healthy and just society within environmental limits; ▪ Preservation of coastal zones for present and future generations.

Taking into account the key objectives identified in Table 1 and further analysis within the literature review, a list of key elements was produced for both Marine Spatial Planning and Integrated Coastal Zone Management. A workshop of area-based planning experts was convened to discuss and condense the key elements to a list of ten. These elements were identified and cross-referenced with the key attributes of area-based management approaches identified in the Technical Report. Each element was then mapped against Sustainable Development Goal Targets 14.1 and 14.2 to determine the linkages and the potential role of each element in supporting the delivery of that target. Table 2 provides a detailed explanation as to how each element is realised in Marine Spatial Planning and Integrated Coastal Zone Management, as well as the link between the approach to the Sustainable Development Goal Targets 14.1 and 14.2. A number of case studies were then developed to identify practical evidence of where such elements have helped to support the delivery of these two targets. Case study summaries are provided in Section 5.

Table 2: Detailed analysis of elements, as identified through the literature review process, in the context of Marine Spatial Planning and Integrated Coastal Zone Management, and the link to Sustainable Development Goal (SDG) Targets 14.1 and 14.2. The detail comes from specific mentions in guidance documents on the two approaches (see Annex I). Attributes refer to key attributes of area-based management approaches identified in the Technical Report.

ATTRIBUTE(S)	ELEMENT	MARINE SPATIAL PLANNING EXPLANATION	INTEGRATED COASTAL ZONE MANAGEMENT EXPLANATION	LINK TO SDG TARGET 14.1 AND/OR 14.2
	Integrated management of sea and land	N/A	The spatial focus of Integrated Coastal Zone Management is the coastal zone. Marine and terrestrial areas are managed together, taking into account the impacts of land-based activities on marine habitats. This requires coordination and cooperation across different marine and terrestrial institutions, administrative agencies and competent authorities at local, regional and national levels.	The integrated consideration of marine and terrestrial activities and ecosystem conditions supports the prevention and reduction of marine pollution from land-based activities (14.1), and helps avoid significant adverse impacts on marine and coastal ecosystems (14.2).
	Ecosystem-based approach	Marine Spatial Planning and Integrated Coastal Zone Management recognise the interconnected nature of coastal ecosystems and see humans as part of this system. They focus on maintaining ecosystem integrity and functioning to ensure resilience to change and sustained delivery of ecosystem services. An ecosystem-based approach integrates ecological, economic and social objectives in one holistic approach, respecting ecological limits/carrying capacity, and balances human use and development needs with ecosystem conservation and protection needs. It is a key principle of sustainability.		Sustainable management requires an ecosystem-based approach; ecosystem-based management avoids significant adverse impacts and maintains the health and productivity of marine ecosystems (14.2).
N/A	Use of a combination of instruments for implementation	N/A	Integrated Coastal Zone Management builds on existing management structures and mechanisms and uses a combination of different tools for implementation, including law, policy, regulations, management strategies, action programmes, development programmes, economic instruments, customary law, voluntary agreements, technological solutions, research and education, and civil society engagement.	The use of multiple instruments for implementation means that Integrated Coastal Zone Management can be adapted to address area specific needs, ensuring effective protection of marine ecosystems and resources (14.2). The combination of sea and land based instruments also facilitates holistic protection from different sources of pollution (14.1).

ATTRIBUTE(S)	ELEMENT	MARINE SPATIAL PLANNING EXPLANATION	INTEGRATED COASTAL ZONE MANAGEMENT EXPLANATION	LINK TO SDG TARGET 14.1 AND/OR 14.2
	Adaptive management (based on best available evidence)	<p>Marine Spatial Planning and Integrated Coastal Zone Management are continuous, iterative and dynamic planning processes that are based on best available evidence (including environmental impact and risk assessments, scientific data, sectoral information, indigenous and local knowledge). Plans can be adapted to respond to changes in conditions or evidence. Monitoring and periodic reviews to identify change are key for enabling adaptive management.</p>		<p>Being able to adapt to change supports long term sustainability of ecosystem management and protection (14.2) and allows to respond to potential new threats (14.1, 14.2).</p>
	Long term perspective	<p>Marine Spatial Planning and Integrated Coastal Zone Management integrate short and medium term management needs with long term objectives, under consideration of the precautionary principle and intergenerational equity.</p>		<p>Sustainability (14.2) requires equal consideration of present and future needs. Having a long term perspective in planning and management is key to this.</p>
	Participatory engagement	<p>A key element of Marine Spatial Planning and Integrated Coastal Zone Management is active, early and continuous involvement of all relevant stakeholders in policy formulation, decision making, management implementation, monitoring and review. Stakeholders include relevant economic sectors, government institutions, non-governmental organisations, scientists, local communities and civil society.</p>		<p>Participatory involvement of all concerned parties is a key principle of sustainability (14.2). It supports the identification and prioritisation of issues, integration of local knowledge into the evidence base, and development of implementable solutions; it builds buy-in and commitment, generates ownership and shared responsibility, and reduces conflict; it helps ensure intra-and intergenerational equity; and thus facilitates effective implementation of management and long term resilience of plans.</p>

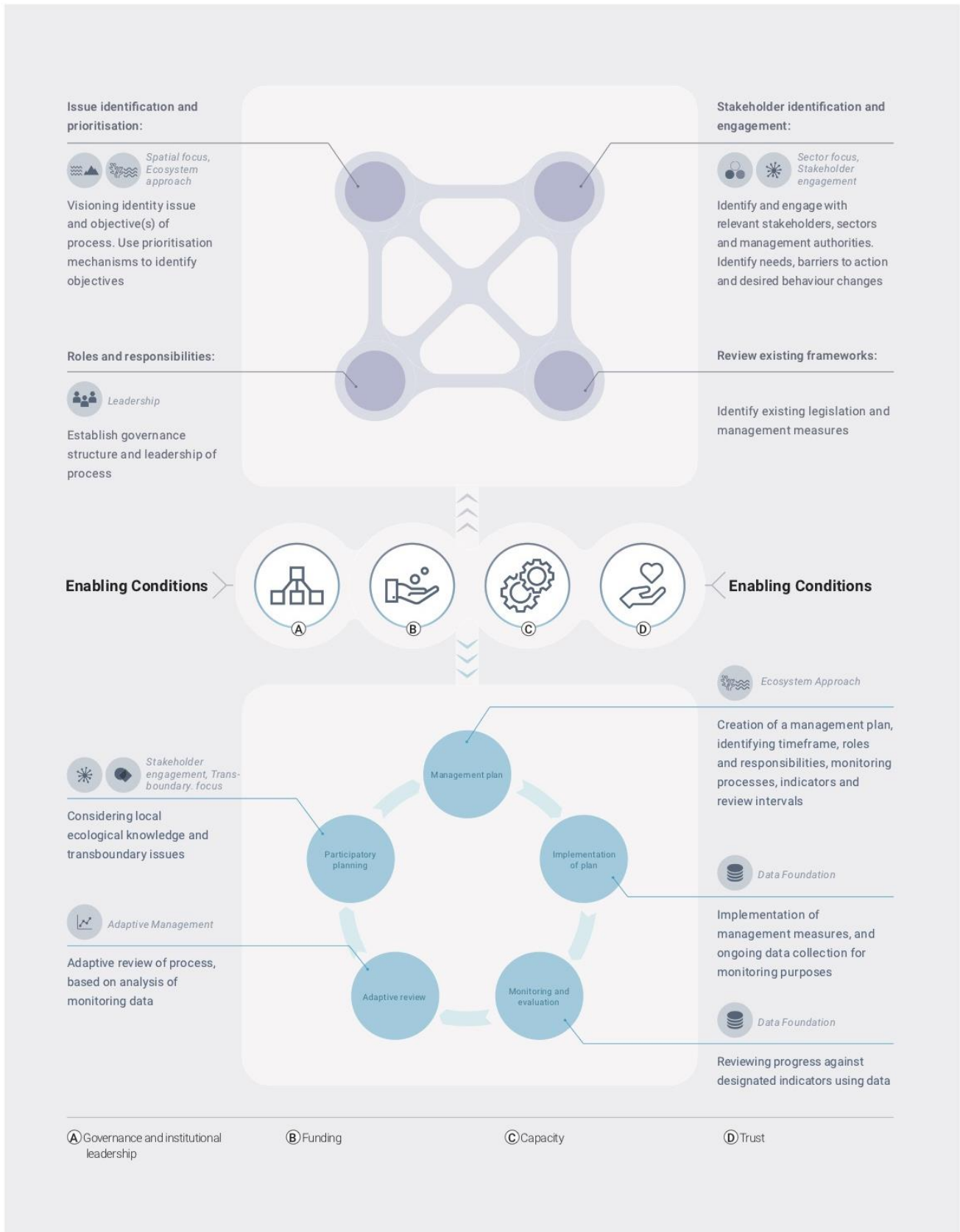
ATTRIBUTE(S)	ELEMENT	MARINE SPATIAL PLANNING EXPLANATION	INTEGRATED COASTAL ZONE MANAGEMENT EXPLANATION	LINK TO SDG TARGET 14.1 AND/OR 14.2
	Cross-sectoral integration	<p>Marine Spatial Planning integrates the needs and policies of multiple marine sectors in one coherent planning framework. This requires coordination and cooperation across different sectorial institutions, administrative agencies and competent authorities at local, regional and national level.</p>	<p>Integrated Coastal Zone Management aims to produce one coherent planning and management framework that combines the needs and policies of multiple coastal sectors (marine and terrestrial). Again, this requires coordination and cooperation across different sectorial institutions, administrative agencies and competent authorities at local, regional and national level.</p>	<p>The interconnected nature of marine ecosystems means that different marine activities are interconnected and have cumulative impacts on the marine environment. Integrated planning and management of multiple sectors in one coherent framework helps address the cumulative effects of multiple activities in order to avoid significant adverse impacts, support effective protection (14.2) and reduce marine pollution (14.1).</p>
	Planning/management for multiple uses	<p>Marine Spatial Planning and Integrated Coastal Zone Management integrate multiple uses in one coherent planning framework, coordinating different activities and resource uses in the coastal and/or marine environment. Conflict management and encouraging co-location of compatible activities play a key role in Marine Spatial Planning.</p>	<p>Marine Spatial Planning and Integrated Coastal Zone Management integrate multiple uses in one coherent planning framework, coordinating different activities and resource uses in the coastal and/or marine environment. Conflict management and encouraging co-location of compatible activities play a key role in Marine Spatial Planning.</p>	<p><i>As above.</i></p>
	Cross-border collaboration	<p>The spatial focus of Marine Spatial Planning is on marine regions, recognising the transboundary dimensions of marine ecosystems and of marine activities and resource uses. This requires coordination and collaboration across administrative, jurisdictional and national marine boundaries.</p>	<p>The spatial focus of ICZM is on the coastal zone, recognising the connectivity between land and sea and the transboundary nature of activities and resource uses in coastal areas. This requires coordination and collaboration across administrative and jurisdictional marine and terrestrial boundaries.</p>	<p>The interconnected nature of marine ecosystems means that marine pollution and other adverse impacts of human activities occur across administrative and jurisdictional boundaries, both within and between countries. An approach that encourages and facilitates cross-border collaboration helps address transboundary marine issues more effectively in order to achieve healthy and productive oceans (14.1, 14.2).</p>

ATTRIBUTE(S)	ELEMENT	MARINE SPATIAL PLANNING EXPLANATION	INTEGRATED COASTAL ZONE MANAGEMENT EXPLANATION	LINK TO SDG TARGET 14.1 AND/OR 14.2
N/A	Use of existing management arrangements	Marine Spatial Planning works within existing political, legal, administrative and cultural regimes. It provides a coherent planning framework that supports better coordination and harmonisation of existing management strategies and instruments.	N/A	The use of existing governance structures means that Marine Spatial Planning can efficiently support effective protection of marine ecosystems and resources (14.2).

4 Applying area-based management approaches to Sustainable Development Goal Targets

A set of conceptual guidelines were developed for the application of Marine Spatial Planning and Integrated Coastal Zone Management to Sustainable Development Goal Targets 14.1 and 14.2. This guidance was developed through a consultative process, drawing upon expert knowledge, key elements (Section 3) and case studies (Section 5). Both Marine Spatial Planning and Integrated Coastal Zone Management are known to be complementary in their approaches, and the way in which these approaches are applied will be tailored to the unique context of each country. The conceptual guidelines illustrated in Figure 1 provide an illustration of the application of these approaches, providing an initial framework for planning processes. This guidance is accompanied by Tables 3 and 4, which detail the application of this framework to the Sustainable Development Goal Targets 14.1 and 14.2.

Figure 1: Conceptual guidelines developed for the application of Marine Spatial Planning and Integrated Coastal Zone Management and Marine Spatial Planning to Sustainable Development Goal Targets 14.1 and 14.2



4.1 Applying an Integrated Coastal Zone Management approach to support the delivery of Sustainable Development Goal 14.1 on pollution control

Table 3 is intended to identify how the conceptual guidelines illustrated in Figure 1 can be used to apply an Integrated Coastal Zone Management approach to Sustainable Development Goal Target 14.1 on pollution management. The table is organised into the different phases of the conceptual guidelines. Each phase has a detailed description of the necessary Integrated Coastal Zone Management steps to be taken during that phase, in relation to achieving Sustainable Development Goal Target 14.1. An excerpt from the case studies is provided for each phase, drawing on real world examples. The full case studies can be found in Section 5.

Table 3: Detailed description of conceptual guidelines for the application of an Integrated Coastal Zone Management approach to Sustainable Development Goal Target 14.1 on marine pollution, including excerpts from practical-evidence case studies. More detail from each case study can be found in Section 5.

CONCEPTUAL GUIDELINE PHASE	DETAILED DESCRIPTION
<p>Issue identification and prioritisation</p>	<p>Issue identification</p> <p>Identify:</p> <ul style="list-style-type: none"> ▪ Environmental issues for the target areas and associated threats - this will support the identification of appropriate focal area(s) and geographic scale. ▪ Priority water quality issues, such as eutrophication, persistent organic pollutants, heavy metals, pathogens, marine litter. ▪ Source(s) of contaminants (land-based and sea-based) by identifying a source inventory and possible pollution hotspots applying an approach such as a rapid assessment methodology. ▪ Relevant data and information to undertake the necessary assessment, including socio-economic data and information. ▪ Problematic behaviours and drivers of these behaviours. Ocean Literacy approaches can be used to communicate with target audience(s) to promote pro-environmental behaviour changes. <p>Issue prioritisation</p> <ul style="list-style-type: none"> ▪ Consider prioritising by pollutant initially and, based on contaminant sources, consider prioritising action at a sectoral level. ▪ Identify existing policy at the national level. ▪ Further refine stakeholders and scale based on outcomes of policy analysis and rapid assessment. ▪ Pollution control may be established as the key objective; however, the achievement of other objectives may also be supported by Integrated Coastal Zone Management. Other objectives may include progress towards wastewater, maritime industry waste and in-port waste handling policies. ▪ Cost-benefit analysis can be used to support prioritisation of issues per area. <p>Supporting case study example: <i>In Xiamen city, Fujian Province, China pollution from excessive reclamation activities, clothing production, refuse discharge, aquaculture, and agriculture were causing a significant adverse impact on the marine environment. To tackle this problem an Integrated Coastal Zone Management plan was implemented in Xiamen city, Fujian Province in 1994. Over the years, the operational methodology has been improved and Xiamen ICM</i></p>

was recognized as a successful Integrated Coastal Zone Management model, commonly known as the “Xiamen Model”. The Xiamen Model can be characterized as problem-oriented, legislation-first, local government-led and science-management integrated model.

CONCEPTUAL GUIDELINE PHASE

DETAILED DESCRIPTION

Stakeholder identification and engagement

Identify:

- **Stakeholder needs**, such as the need to fertilise agricultural land or the need to access fishing grounds.
- **Barriers** to uptake of current management measures i.e. financial, access, habit.
- **Target audience** in order to tailor messaging appropriately. Identify whether the target audience is different to stakeholders.
- **Actions to be taken** by target audience.
- **Relevant sector(s)** and sectoral **dependencies** on natural capital.

Supporting case study examples: During preparation stages of the national strategy for Integrated Coastal Zone Management in **Montenegro**, CEED Consulting, a development consultancy, led the stakeholder participative process, which included 48 in-depth interviews, six workshops, and sectoral analyses. Recommendations that were considered during the development of Montenegro’s National Strategy for Integrated Coastal Zone Management. Workshop participants noted that marine pollution, including noise pollution, were barriers to the development of coastal areas for tourism. Measures for pollution prevention and remediation were explicitly listed within the National Strategy.

Roles and responsibilities

- Establish necessary Integrated Coastal Zone Management **governance mechanism** (for example, an Integrated Coastal Zone Management committee comprising of relevant line ministries/departments and relevant stakeholders) with identified leadership and clear roles of relevant stakeholders in the governance framework.
- Identify appropriate **levels of involvement** for each department/organisation and possible contribution to the process at each stage.

Supporting case study example: During the Integrated Coastal Zone Management process in the **Philippines**, authority to approve management plans was assigned to local government. This is an example of local jurisdiction taking responsibility for the management of an issue, leading to success.

Review existing frameworks

- Identify **existing legislation** at the scale relevant to the Integrated Coastal Zone Management planning existing management measures, such as wastewater treatment facility gaps and effectiveness.

Supporting case study example: In **Montenegro**, national level frameworks and monitoring programmes are currently under review and the annual assessment of the state of the marine environment has helped to identify gaps and priorities for upcoming implementation. Efforts have been taken to link up existing processes and utilise existing frameworks and monitoring programmes to coordinate efforts and avoid duplication of effort.

Participatory planning

Note: phase may not be necessary if major pollution sources are identified and major sectoral activities are identified in ‘Issue identification and prioritisation’

- Undertake **participatory mapping and/or planning exercises**, drawing on knowledge of spatial range of activities and local ecological knowledge.
- Identify **existing capacity**.
- Consider **transboundary** nature of issue.
- **Consultation** with wider stakeholder on management plan.
- If applicable, undertake participatory decision-making on management actions.

Supporting case study example: Communities were directly involved in the Integrated Coastal Zone Management planning process in the **Philippines** through workshops, consultation sessions, village meetings and formal meetings at the local government level.

Management plan

- Create a **management plan** to outline specific measures which may be linked with other global and regional planning frameworks, such as the National Implementation Plan (NIP) to support implementation of Stockholm Convention and Integrated Coastal Zone Management plans under regional seas Integrated Coastal Zone Management protocols.
- Specify **timeframe, management objectives and responsibilities**.
- Outline **funding requirements** and routes for funding.

- Identify **management measures and associated responsibilities for these**.
- Advise **monitoring approaches**, appropriate implementation **performance indicators** and **review intervals**.
- Suggest **required enforcement capacity**.
- Outline **adaptive nature of plan**.

CONCEPTUAL GUIDELINE PHASE

DETAILED DESCRIPTION

Management plan (continued)

- Ensure the plan addresses **climate change mitigation** and adaptation appropriately and involves **consideration of gender and indigenous people**.
- Undertake **environmental and socio-economic safeguard analysis** to mitigate negative impacts.

Supporting case study example: *In China, management plans are tailored to the needs of the target area by the relevant local government authorities. This allows their needs to be more specifically addressed by management measures, such as tackling oil pollution in Shandong Province and protecting mangroves in southern China.*

Implementation of plan

- Implementation of **management measure(s) by pre-identified departments/organisations**.
- Implement ongoing **monitoring and data collection processes**. Ensure data is stored in an appropriate location, giving consideration to data protection regulations.
- **Mobilise financial resources** from government budgets or other financial mechanisms, such as carbon funds.

Supporting case study example: *The Marine Ecological Red Line (MERL) is a type of marine spatial planning aimed at ecological protection. It has been partially implemented within China, but has only gained legal status in late 2014 and implementation in 2015, under which each province can develop their own MERL.*

Monitoring and evaluation

- **Monitor the effectiveness** of management measures.
- **Analyse data** collected during implementation after designated interval, or when triggered by other factors (i.e. changes in government, natural disaster, large-scale changes in ecosystem).
- Review progress against the established **implementation performance indicators**.

Supporting case study example: *Indicators are used in Montenegro in order to assess the marine environment via an ecosystem approach. Monitoring protocols and thresholds were revised in order to align with indicators and track change and impact of Integrated Coastal Zone Management.*

Adaptive review

Note: phase may not be necessary if there is no change to the management plan

- Review the extent to which the process **met its objectives**.
- Identify any **barriers** to effective planning and implementation, and potential solutions.
- Identify **lessons learned** that can support iteration of the process or be used by others.
- Consider **modifications** to enhance the effectiveness of the process so that the next review shows greater impact.

Supporting case study example: *Progress towards plans in the Philippines is reviewed on a semi-annual basis, during which biophysical data is collected to study the condition of the ecosystem. Following analysis of the data, the Integrated Coastal Zone Management plan is refined and revised as required. This flexibility in the development of management approaches supports the long-term sustainability of ecosystem management, and incorporates new threats as required. The periodic revision of Integrated Coastal Zone Management programs are aligned with the cycle of planning and budgeting of the local government. This means changes are aligned with annual budgets, to support sustainable financing.*

4.2 Applying a Marine Spatial Planning approach to Sustainable Development Goal 14.2

Table 4 is intended to illustrate how the conceptual guidelines, which can be found in Figure 1, can be used to apply a Marine Spatial Planning approach to Sustainable Development Goal Target 14.2. The table is segmented into the different phases of the conceptual guidelines. Each phase has a detailed description of the types of activities that would be undertaken within a Marine Spatial Planning process in relation to achieving Sustainable Development Goal Target 14.2. An excerpt from the case studies is provided for each phase, drawing on real world examples. The full case studies can be found in Section 5.

Table 4: Detailed description of conceptual guidelines for the application of a Marine Spatial Planning approach to Sustainable Development Goal Target 14.2 on effective protection of marine and coastal ecosystems, including excerpts from practical-evidence case studies. More detail from each case study can be found in Section 6.

CONCEPTUAL GUIDELINE PHASE	DETAILED DESCRIPTION
<p><i>Issue identification and prioritisation</i></p>	<p>Issue identification</p> <ul style="list-style-type: none"> ▪ Identify appropriate geographic scale to apply a Marine Spatial Planning approach. ▪ Carry out a baseline assessment of the environmental and socio-economic status of the marine and coastal environment of the target area. Data collected can be used to support the overall process. ▪ Undertake a detailed ecosystem assessment to link the key ecosystems and species found in the baseline assessment, to the ecosystem services they provide. As part of this process, identify key threats to marine and coastal ecosystem functioning. It may be useful to carry out a valuation of the marine and coastal ecosystem services. Threats to the underlying ecosystem may come from unsustainable resource exploitation, or activities that damage the underlying ecosystems. Consider cumulative impacts of human activities. <p>Issue prioritisation</p> <ul style="list-style-type: none"> ▪ Undertake mapping of the geographic extent of human activities that depend on, or threaten, key ecosystem functions. Identify areas of overlap between ecosystems and human activities. This can be used as a mechanism to prioritise hotspots of activities, or sources of ecosystem services that need protection. <p>Supporting case study example: <i>Countries surrounding the Baltic Sea developed the political mandate for cooperation and knowledge exchange, emphasising the importance of an ecosystem approach for Marine Spatial Planning. This mandate supports long-term sustainable management by ensuring regular information exchange which underpins adaptive management.</i></p>
<p><i>Stakeholder identification and engagement</i></p>	<p>Identify:</p> <ul style="list-style-type: none"> ▪ Relevant activities that have positive and negative impacts on ecosystem functions and sectors dependent on natural capital. ▪ Relevant sector(s) active in target area, and areas with overlapping users. ▪ Stakeholder needs, such as need to use ecosystem services and livelihoods. ▪ Stakeholder behaviours that have positive and negative impacts on ecosystems. ▪ Barriers to uptake of current management measures (i.e. financial, access, habit) to explore any stakeholder engagement issues. ▪ Identify current and future spatial use, based on the spatial distribution of ecosystem services and values associated with them. <p>Supporting case study example: <i>In Indonesia, the Marine Spatial Planning process launched in 2017 requires the integration of terrestrial and marine activities into the plan, through an agreement with all relevant stakeholders. The national government requires the provincial government to identify relevant</i></p>

stakeholders from coastal communities, businesses, universities and NGOs to include in a forum. Stakeholders sign to prove their involvement in the process, and the minutes are made publicly available after the meetings.

CONCEPTUAL GUIDELINE PHASE	DETAILED DESCRIPTION
<p>Roles and responsibilities</p>	<ul style="list-style-type: none"> ▪ Establish necessary Marine Spatial Planning governance mechanism (e.g., Marine Spatial Planning committee, comprising of relevant line ministries/departments and relevant stakeholders) with identified leadership and clear roles of stakeholders in the governance framework. ▪ Identify level of involvement of different actors, and possible contribution in process at each stage. <p><i>Supporting case study example: In Croatia, capacity building through the World Bank-funded Coastal Cities Pollution Control Project was an important driver of improvements in Croatia's wastewater collection, treatment, and disposal abilities. Specifically, the project helped the National Water Agency (Hrvatske vode, HV) develop into a key institution for wastewater services and maintain investment in the country's wastewater infrastructure. The project supported HV in the preparation and implementation of a Water Management Strategy. By enabling ownership of the project by a specific agency, the CCPCP helped Croatia to continue project processes after the end of the funded project.</i></p>
<p>Review existing frameworks</p>	<p>Identify:</p> <ul style="list-style-type: none"> ▪ Existing protection measures, such as Marine Protected Areas, Locally Managed Marine Areas, and any associated management plans. ▪ Existing legislation at the scale relevant to the Marine Spatial Planning approach. ▪ Existing sectoral development plans. ▪ Existing action plans, particularly, but not limited to, those associated with global regional agreements, such as National Biodiversity Strategies and Action Plans (NBSAP) for the Convention on Biological Diversity, National Action Protocols (NAPs) and Specially Protected Areas under the Regional Seas Biodiversity Protocols. <p><i>Supporting case study example: In Montenegro, national level frameworks and monitoring programmes are currently under review and the annual assessment of the state of the marine environment has helped to identify gaps and priorities for upcoming implementation. Efforts have been taken to link up existing processes and utilise existing frameworks and monitoring programmes to coordinate efforts and avoid duplication of effort.</i></p>
<p>Participatory planning</p>	<ul style="list-style-type: none"> ▪ Undertake participatory mapping and/or planning exercises, drawing on knowledge of spatial range of activities and local ecological knowledge. ▪ Identify existing capacity and gaps. ▪ Consider the transboundary nature of the issue. <p><i>Supporting case study example: The national government in Indonesia requires provincial governments to focus on certain priority activities. A forum of stakeholder representatives identifies existing activities taking place in the area and plan for future activities. They discuss the harmonisation of terrestrial and marine activities in the coastal area. Using data collected on ecosystem condition and human activities in the area, the forum undertake a participatory mapping process to identify zones for specific activities. The results of the participatory mapping undertaken were sent to the Marine Spatial Planning Working Group to ensure that proposed regulations had limited detrimental social or economic implications.</i></p>
<p>Management plan</p>	<ul style="list-style-type: none"> ▪ Create a management plan to outline measures which may be linked with other global and regional frameworks planning frameworks, such as NBSAPs and NAPs. ▪ Specify timeframes for activities, objectives and responsibilities. ▪ Advise monitoring approaches, appropriate implementation performance indicators and review intervals. ▪ Outline funding requirements. ▪ Identify management measures such as creation of Marine Protected Areas, and regulation of human activities, such as fisheries, agriculture, land use or sea-use change. ▪ Suggest required implementation capacity. ▪ Outline adaptive nature of plan.

- Ensure the plan addresses **climate change mitigation** and adaptation appropriately and involves **consideration of gender and indigenous people**.
- Undertake **environmental and socio-economic safeguard analysis** to mitigate negative impact.

CONCEPTUAL GUIDELINE PHASE

DETAILED DESCRIPTION

Supporting case study example: In Montenegro, efforts have been taken to link up existing processes and utilise existing frameworks and monitoring programmes to coordinate efforts and avoid duplication of effort. For example, a lack in baseline data is being actively addressed by ongoing and upcoming projects which will support collection of previously identified missing data and available financial resources, such as the European Union Strategy for the Adriatic and Ionian Region (EUSAIR) and the Adriatic-Ionian Initiative (AII), are used strategically. The development of a cross-institutional database is expected aid coordination greatly. Revisions to methodologies have been and will be undertaken through Global Environment Facility Adriatic project, but also the upcoming project supported by the Instrument for the Pre-Accession Assistance (IPA) which will ensure the implementation of the Marine Strategy Framework Directive in Montenegro, in order to collect higher quality and more useful data, drawing knowledge from existing national efforts.

Implementation of plan

- **Implementation of management measure(s).**
- Implement ongoing **monitoring and data collection processes** using traditional environmental management approaches, social approaches and sectoral approaches with data/information stored in the data/information system under the issue identification step.
- Mobilise **financial resources** from government budgets, or other financial means, such as Protected Area user fees.

Monitoring and evaluation

- **Monitor the effectiveness** of management measures.
- **Analyse data** collected during implementation after designated interval, or when triggered by other factors (i.e. changes in government, natural disaster, large-scale changes in ecosystem).
- **Review progress against the** established implementation performance indicators.

Supporting case study example: Methods and tools for cumulative impact assessment (CIA) and social and economic analysis (ESA), for the purposes of marine policies, have already been developed in the **Baltic Sea**. Both CIA and ESA are part of the Baltic Marine Environment Protection Commission – Helsinki Commission (HELCOM) second holistic assessment of the Baltic Sea. The cumulative impact assessment method, using tools such as ‘Symphony’ for ecosystem-based Marine Spatial Planning has also been tested in some national Marine Spatial Planning processes. These tools and methods will be expanded or adapted to serve Marine Spatial Planning under the lead of HELCOM within the Pan Baltic Scope project.

Adaptive review

- **Review progress** against objectives.
- Identify any **barriers** to effective planning and implementation, and potential solutions.
- Identify **lessons learned** that can support the design of other planning processes, such as Marine Protected Areas.
- **Consider modifications** to enhance the effectiveness of the process in the interval before the next review.

Note: phase may not be necessary if there is no change to the management plan

Supporting case study example: The management of the **Baltic Sea** is reviewed over a six-year cycle, with the adaptive revision of management plans. Coordination occurs across the relevant ministries in order to ensure that monitoring and evaluation processes feed into the adaptive review. In **Montenegro**, annual assessment of the marine environment enables priority areas to be identified and targeted, while with the improved monitoring programme of the marine environment which will be available in 2019 in line with the Integrated Monitoring and Assessment Programme of the Barcelona Convention this assessment will allow for the reporting on the state of marine environment according to the regionally agreed Integrated Monitoring and Assessment Programme or Ecosystem Approach indicators. In order to address limited capacity, efforts have been taken to coordinate processes and ensure high quality, useful information is collected and made available.

5 Case Studies

In order to provide an evidence base from existing practices and experiences, a number of case studies were developed on Marine Spatial Planning and Integrated Coastal Zone Management approaches from around the world. These focused on identifying how such approaches have the potential to provide tangible contributions towards Sustainable Development Goal Target 14.1 on the reduction of marine pollution and Sustainable Development Goal Target 14.2 on effective protection of marine and coastal ecosystems.

Case studies were compiled following interviews with practitioners and experts regarding existing processes that align with the aims of Sustainable Development Goal Targets 14.1 and 14.2. Case studies focused on processes that have been implemented for a number of years in order to understand how successful outcomes were reached. Evidence gathered from these case studies, including lessons learned and key successes, was then used to develop the conceptual guidelines and ground them in practical evidence (Sections 4 and 5). These case studies are a self-evaluation of the success of the implementation of these approaches as reported by interviewees.

This section provides the case studies used in this analysis, which describe national- and regional-level Integrated Coastal Zone Management and/or Marine Spatial Planning approaches. Case studies include: Integrated Coastal Zone Management and Marine Spatial Planning in **the Baltic**, Integrated Coastal Zone Management in **China**, Marine Spatial Planning and Integrated Coastal Zone Management in **Croatia**, Marine Spatial Planning in **Indonesia**, Integrated Coastal Zone Management and Marine Spatial Planning in **Montenegro** and Integrated Coastal Zone Management in **the Philippines**. Excerpts from these case studies are included in Tables 3 and 4 to provide supporting evidence for the application of Marine Spatial Planning and Integrated Coastal Zone Management to Sustainable Development Goal Targets 14.1 and 14.2, respectively.

5.1 Integrated Coastal Zone Management and Marine Spatial Planning in the Baltic: A Case Study

Interviewee details: Baltic Marine Environment Protection Commission – Helsinki Commission (HELCOM)

Date of interview: 20 July 2018

Case study location: The Baltic

Type of programme: Marine Spatial Planning

Background: national, regional and cross-border management

Integrated Coastal Zone Management has been implemented in the Baltic Sea during the last 20 years⁸, and more recently Marine Spatial Planning has been given prominence as a means of marine governance in the region. Nine countries share a coastline around this relatively small and enclosed sea (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, and Sweden). Management of human activities, as well as Marine Spatial Planning, in the Baltic Sea have a strong transboundary dimension, requiring national management, systematic sea-basin (regional) coordination, and cross-border interactions.



The European Union Maritime Spatial Planning Directive⁹ has been a major driver for initiating national maritime spatial planning in the Baltic Sea, as eight out of the nine coastal countries are European Union members. A requirement of the European Union Maritime Spatial Planning Directive is the cooperation of European Union member states bordering marine waters. This aims to ensure that the maritime spatial plans to be established by 2021 are coherent and coordinated across the marine region concerned.

On the regional level, the Baltic Sea countries agreed on a common goal to draw up and apply maritime spatial plans throughout the Baltic Sea region by 2020, and that these would be coherent across borders and apply the ecosystem approach¹⁰.

Coherent planning poses a major challenge as the Baltic Sea countries have different national administrative and legal settings and are at different stages of their Marine Spatial

⁸ The Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) by HELCOM (1992-2012) included development of Integrated Coastal Zone Management Plans for five coastal lagoons and wetlands, four of which were transboundary; HELCOM Recommendation 24/10 "Implementation of Integrated Marine and Coastal Management of Human Activities in the Baltic Sea Area", adopted by Contracting Parties to the Helsinki Convention in 2003 (currently under revision); Eight Baltic Sea countries implement EU Recommendation on Integrated Coastal Zone Management from 2002.

⁹ The European Union Marine Spatial Planning Directive: eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0089&from=EN

¹⁰ Further information can be found in *The Regional Baltic Marine Spatial Planning Roadmap, 2013 – 2020*: www.helcom.fi/action-areas/maritime-spatial-planning/mssp-roadmap

Planning process¹¹. Furthermore, these plans are developed at different strategic levels and geographical scales.



Photo credit: W. Wichmann. Common eelgrass (Zostera marina) on sandy bottom surrounded by erratic boulders

The Baltic Marine Environment Protection Commission – Helsinki Commission (HELCOM) and the Vision and Strategies around the Baltic Sea (VASAB), have been mandated by the coastal countries to jointly coordinate of Marine Spatial Planning at the whole sea basin scale. These two regional and intergovernmental organisations established the HELCOM-VASAB Marine Spatial Planning working group in 2010 for this purpose.



The group combined the institutional capacities and knowledge of marine ecosystems and ocean policies of HELCOM with the tradition and experience of spatial planning of VASAB. Each Baltic Sea country is represented in this forum by the competent Marine Spatial Planning authorities and a few countries are also represented by environmental authorities. The European Union, as a HELCOM Contracting Party, is also a member of the group, represented by the European Commission.

¹¹ Fact sheets on the status of Marine Spatial Planning in Baltic Sea countries and Norway can be found at: www.helcom.fi/action-areas/maritime-spatial-planning/country-fact-sheets

Practical cross-border cooperation among the coastal countries has been supported by a series of regional Marine Spatial Planning projects. The 2018-2019 Pan Baltic Scope project has been funded by the European Maritime and Fisheries Fund (EMFF) in order to achieve “coherent national maritime spatial planning in the Baltic Sea region and to build lasting macro-region mechanisms for cross-border Marine Spatial Planning cooperation¹²”. The project builds upon results and experiences from previous Marine Spatial Planning-related projects conducted on the regional and national scale, including planning and recommendations from the 2015-2017 Baltic SCOPE project.

Ecosystem approach in Marine Spatial Planning

Understanding and application of the ecosystem approach was greatly advanced among the Baltic Sea coastal countries during the implementation of the HELCOM Baltic Sea Action Plan¹³ and where applied the EU Marine Strategy Framework Directive. HELCOM, based on a regional treaty (Helsinki Convention from 1974, amended in 1992), has served as the regional platform through which much of this work has been communicated.



In the BSAP Contracting Parties agreed “to jointly develop by 2010, as well as test, apply and evaluate by 2012, in cooperation with other relevant international bodies, broad-scale, cross-sectorial, marine spatial planning principles based on the Ecosystem Approach”¹⁴.

The Baltic Sea Broad-scale Maritime Spatial Planning Principles¹⁵, adopted by HELCOM and VASAB in 2010, provide guidance for achieving better coherence in the development of Maritime Spatial Planning systems in the Baltic Sea Region. The ecosystem approach has been agreed by the Baltic Sea countries to be an overarching principle.

Guidelines finalised to support uptake of ecosystem-based approaches

A concrete result of cooperation in the HELCOM-VASAB Marine Spatial Planning working group is the ‘Guideline for the implementation of ecosystem-based approach in the Baltic Sea area’¹⁶. It presents a first step towards a common understanding on how the ecosystem-based approach can be applied in Marine Spatial Planning. It took five years for the countries to reach an agreement and finalise the ‘Guideline’ (from initial drafting in 2012 to the approval in 2016) due, for example, to differing interpretations of the concept of the ecosystem

¹² The *Pan Baltic Scope project* can be found at: www.msp-platform.eu/projects/pan-baltic-scope

¹³ The Baltic Sea Action Plan 2007 – 2021 can be found at: <http://www.helcom.fi/Pages/Baltic-Sea-Action-Plan0910-8843.aspx>

¹⁴ HELCOM Recommendation 28E/9 on development of broad-scale marine spatial planning principles in the Baltic Sea area: <http://www.helcom.fi/Recommendations/Rec%2028E-9.pdf>

¹⁵ Baltic Sea Broad-scale Maritime Spatial Planning Principles: www.helcom.fi/action-areas/maritime-spatial-planning/msp-principles

¹⁶ The Guideline for the implementation of ecosystem-based approach in MSP in the Baltic Sea area can be found at: www.helcom.fi/action-areas/maritime-spatial-planning/msp-guidelines

approach, its definition and potential implications for Marine Spatial Planning among, and within the countries. The adoption of the guideline is thus considered a major milestone, showcasing that it is possible to bridge different countries' policies.). The guideline has been further defined as an Ecosystem Approach Checklist Toolbox, which will be tested in the Pan Baltic Scope project.

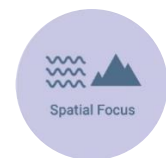


Marine Spatial Planning aims to ensure that the combined pressure of all human activities is kept within levels compatible with the achievement of good environmental status, as laid out in the European Union Marine Spatial Planning Directive¹⁷. Furthermore, economic and social aspects must be considered when establishing national maritime spatial plans.

Regional methods and tools for cumulative impact assessment (CIA) and social and economic analysis (ESA), for the purposes of marine policies, have already been developed in the Baltic Sea. Both CIA and ESA are part of the HELCOM second holistic assessment of the Baltic Sea¹⁸. The cumulative impact assessment method, using tools such as 'Symphony' for ecosystem-based Marine Spatial Planning¹⁹, has also been tested in some national Marine Spatial Planning processes. These tools and methods will be expanded or adapted to serve Marine Spatial Planning under the lead of HELCOM within the Pan Baltic Scope project.

A spatial focus on land and sea

Marine Spatial Planning in the Baltic region has mostly drawn from the experiences of spatial planning on land, with its pros and cons approach. There is, for instance, strong recognition of the need to address land-sea interface in the Marine Spatial Planning processes. However, typically Integrated Coastal Zone Management and Marine Spatial Planning are carried out as separate national processes. Considerations of the land-sea interface is part of the Pan Baltic Scope project, which aims to identify important aspects of land-sea interactions in the region, define practical ways to engage on the issues, and the incorporation of data and method development in Marine Spatial Planning.



Difficulties in cross-sectoral engagement and transboundary consultations

Nationally, cross-sectoral engagement and consultation of the proposed Marine Spatial Planning is a requirement. Governance of activities at sea is complex, and in the Baltic Sea there are many different authorities and organisations responsible for a range of interlinked topics, with authorities regularly acting independently. Maritime spatial planners in the Baltic Sea have thus initially been posed with a major challenge to define the value of Marine Spatial Planning among stakeholders, including sectorial authorities, and to effectively engage them

¹⁷ The European Union Marine Spatial Planning Directive: eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0089&from=EN

¹⁸ The *State of the Baltic Sea – Second HELCOM holistic assessment 2011-2016* report can be found at: www.helcom.fi/Lists/Publications/BSEP155.pdf

¹⁹ Further information about Symphony can be found at: www.havochvatten.se/en/swam/eu-international/marine-spatial-planning/symphony--a-tool-for-ecosystem-based-marine-spatial-planning.html

into the Marine Spatial Planning process. For example, in Baltic Sea fisheries only larger European Union vessels are closely monitored as part of the implementation of Common Fisheries Policies. Less data is available for smaller fishing vessels. However, small scale fishermen have been increasingly willing to share their knowledge and information on existing fishing grounds in order to avoid conflicts in planning, such as the placement of wind parks near to fishing areas.



Furthermore, to ensure that Marine Spatial Planning is coherent across borders, transboundary consultations are vital. According to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) and its Protocol²⁰, its parties have to notify and consult on all spatial plans and projects under considerations that are likely to have a significant adverse environmental impact across boundaries. The Convention is binding to the eight out of the nine Baltic Sea countries (Russia is not a party to the Convention). However, for all other aspects of planning, including smaller environmental projects, no framework for international consultation existed in the Baltic Sea, until the coastal countries agreed on the Guidelines on transboundary consultations, public participation and co-operation²¹ (adopted by HELCOM and VASAB in 2016). The guidelines recommend, for example, to start consultations before the maritime spatial plan is fully drafted so as to give other countries a real chance to contribute to the planning process, and the steps to be taken in organizing stakeholder involvement. Transboundary consultations have already been organised by some countries, including Poland, Finland and Sweden.

Successes: political mandates and basin-wide collaboration

From a long-term perspective, and considering sustainability, a clear political mandate for transboundary cooperation and knowledge exchange is considered essential for success. Countries around the Baltic Sea provided the political mandate, emphasising the importance of the ecosystem-based approach to Marine Spatial Planning. Without such mandate, MSP cooperation may be limited to informal information exchange and short-term projects.



Another key area for success was collaboration between Baltic countries. This is demonstrated through coordination within and between national ministries and authorities to share knowledge, experiences and tools. Collaboration and communication has allowed for a common understanding regarding the ecosystem approach and how this can be implemented in the Baltic. On regional issues, collaboration was seen to help direct national achievements for a common goal, raising ambition and enabling iterative development. Collaboration was also seen to benefit those with limited capacity as they can directly apply tools and data which are suitable, increasing

²⁰ United Nations Economic Commission for Europe (UNECE) Convention on Environmental Impact Assessment in a Transboundary Context, 1997, and the Protocol on Strategic Environmental Assessment, 2003: www.unece.org/env/eia/about/eia_text.html

²¹The *Guidelines on transboundary consultations, public participation and co-operation* can be found at: www.helcom.fi/action-areas/maritime-spatial-planning/msp-guidelines

efficiency. It is felt that initiatives would have taken longer to develop and implement if each country had developed their own guidelines and approach. Direct and regular contacts among the planners have facilitated trust building and created atmosphere of open information exchange where it is easier to understand the context and replicate good solutions. The cooperation at policy level in the HELCOM-VASAB Marine Spatial Planning working group is supported by cooperation at working level. For example, the expert sub-group on MSP data²², consisting of data experts from MSP authorities in the coastal countries, supports data, information and evidence exchange for MSP processes with regard to cross-border and transboundary planning issues.

Implementation, monitoring and measuring impact

Adaptive management occurs over a six-year cycle, with revision of management plans coordinated across the relevant ministries in order to ensure that monitoring and evaluation processes feed into the adaptive review. This process has emphasised the importance of setting achievable goals to ensure impact and success in the following cycle.



As the majority of the coastal countries are still underway with their Marine Spatial Planning processes, it is too early to evaluate effectiveness of Marine Spatial Planning and how much Marine Spatial Planning has contributed to the achievement of environmental goals for the Baltic Sea. Such an evaluation in itself is a challenging task. However, the Pan-Baltic Scope project will develop guidance for the evaluation of national Marine Spatial Planning and their impacts.

Conclusion

Marine Spatial Planning successes within the Baltic Sea stem from a long tradition of cooperation and coordination between the coastal countries. Since the birth of HELCOM in the 1970's it has been widely accepted that regional cooperation was vital to such success. As a result, there has been political willingness amongst the member countries to open up their national MSP processes to set common goals and develop and implement common tools and guidelines.

HELCOM and VASAB have been entrusted to provide a platform for regional cooperation on Marine Spatial Planning. The two bodies have different institutional set ups, mandates and working method; an obvious obstacle when establishing a joint group. Nevertheless the joint HELCOM-VASAB Marine Spatial Planning working group has commonly been viewed as unique, recognizing its added value in facilitating coherent elaboration and implementation

²² <http://www.helcom.fi/helcom-at-work/groups/helcom-vasab-maritime-spatial-planning-working-group/msp-data-expert-sub-group/>

of maritime spatial plans across borders, and providing tangible results with clear practical value²³.

However, the effectiveness of the existing maritime spatial plans in the Baltic Sea has not yet been evaluated, including any real-life change in meeting environmental goals and targets such as Sustainable Development Goal Targets 14.1 and 14.2. Such an evaluation would certainly be a valuable learning process, and could be carried out once the plans in the Baltic Sea countries are established by 2020/2021.

²³ The outcome of the 37th meeting of the Baltic Marine Environment Protection Commission can be found at: <https://portal.helcom.fi/meetings/HELCOM%2037-2016-288/MeetingDocuments/Outcome%20of%20HELCOM%2037-2016.pdf>

5.2 Integrated Coastal Zone Management in China

Interviewee organisation: Centre for Eco-Environmental Sciences, Chinese Academy of Sciences

Date of interview: 28 June 2018

Case study location: China

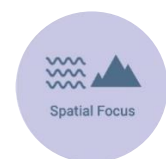
Type of programme: Integrated Coastal Zone Management

Background

The China State Oceanic Administration (SOA) undertook a collaborative programme with Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) in 1994, to implement an Integrated Coastal Zone Management programme. The programme consisted of four phases (Phase I 1994-1999, Phase II 2000-2006, Phase III 2009-2013, Phase IV 2014-2018) in 20 coastal cities, after which Integrated Coastal Zone Management was implemented in Xiamen city, Fujian Province. The National Marine Functional Zoning programme began in China in 1989. Large-scale Marine Functional Zoning started in 1998 where the current four-level system was established, namely: national-level, provincial-level, city-level and county-level. The Marine Ecological Red Line policy was implemented in 2015, with a strong focus on ecosystem management. The Integrated Coastal Zone Management approach used in China requires that plans are revised every five years, during which there is some engagement and consultation with relevant stakeholders. This case study considers progress made in Integrated Coastal Zone Management planning in China on a national scale, as well as focusing on Fujian Province where an Integrated Coastal Zone Management plan has successfully reduced the impact of land-based pollutants on the marine environment.

Integrated management of the land and sea

In Xiamen city, Fujian Province, pollution from excessive reclamation activities, clothing production, refuse discharge, aquaculture, and agriculture were all causing significant adverse impacts on the marine environment. To tackle this problem an Integrated Coastal Zone Management plan was implemented in Xiamen city in 1994. Since then, the operational methodology has been improved and Xiamen Integrated Coastal Zone Management has been recognized as a successful model, commonly known as the “Xiamen Model”. The Xiamen Model can be characterized as problem-oriented, legislation-first, local government-led and science-management integrated. Regulation of Coastal Conservation and Use of Fujian Province was enacted on 1 January 2018. An Integrated Coastal Zone Management approach was used to incorporate and address the impact of land-based pollution on the marine environment.



The main approach used to address this issue was to reduce discharge of waste water from the land. The local government implemented policies on water quality standards, including a

control system of pollutant discharge from land sources and agricultural pollution control based on small watershed management. Furthermore, certification schemes of green products to improve agricultural management were created. These changes contributed to a reduction in coastal eutrophication. The implementation of these measures allowed for coastal water quality to be improved, and progress tracked over time. According to the monitoring data of Oceans & Fisheries Bureau of Xiamen, the sea water quality in the Xiamen Bay remained stable in 2017, compared with an earlier time period. The concentration of heavy metals and arsenic, oil, and other organic pollutants in the sea water complied with very good water quality standard. The main pollution factors in the seawater are inorganic nitrogen and active phosphate.



Photo credit: G. He. View over Xiamen, south-east coast of China

Sea area usage fees are levied from users of sea areas for activities such as aquaculture, industry and tourism, and remain the most important and sustained sources for financing the Xiamen Integrated Coastal Zone Management programs. Payment for Ecosystem Services schemes were also implemented, with a focus on the protection of mangroves and other wetlands. The Xiamen Municipal Government attaches high importance to the construction of the marine ecological damage compensation mechanism, which was developed and tested in 2006. Exploitative activities within Xiamen's sea areas should

compensate for the loss of ecosystem functions and natural resources. The eco-compensation schemes have contributed funds to support replanting mangroves in various locations, implementing fisheries resource enhancement and setting up a special fund for Chinese white dolphin (*Sousa chinensis*) protection. In 2006, the Xinglin Cross-sea Bridge project compensated 6 million RMB yuan for deterioration of the marine environment, which was used for construction of the Chinese white dolphin protection base and other protection activities. The Xiamen Municipal Government promulgated “The Regulation of Marine Ecological Compensation in Xiamen” in April 2018, which explicitly stated that the responsible party should either pay the marine ecological damage compensation fees, or implement the ecological rehabilitation project, to address the issue of marine ecosystem degradation.

Monitoring and evaluation

In order to measure progress towards decreasing land-based pollution, the local government established a water quality monitoring system. With the widespread application of remote sensing technology, marine dynamic surveillance system has been widely applied in Xiamen, which has become a core technical support for coastal management. The system incorporates a number of cutting-edge technologies, including satellite remote sensing, aerial remote sensing, remote monitoring and field monitoring to increase the effective surveillance of sea areas. Xiamen Municipal Government and Xiamen University jointly developed the Xiamen Bay Marine Environmental Monitoring System in 2015; thus implementing automatic monitoring of environmental conditions of Xiamen’s coastal waters and the sharing of real time data between government agencies.

The Xiamen waterfront has become a model for ecological and economic success. Integrated Coastal Zone Management implementation has provided increased access to the beach and seas for leisure and tourism, cleaner lakes and bays for residential real estate, a venue for industries and a home for rich biodiversity. Investment in Integrated Coastal Zone Management has generated net benefit of RMB64 million²⁴ (USD10.3 million) per year for the community.



In China different cities face very different coastal issues. For example, in Shandong Province pollution from the oil industry is a major threat to the marine environment. In some southern cities mangrove protection is of principal importance. The Integrated Coastal Zone Management approach in China is led by local government, which supports the development of a tailored approach to planning taking local context, including administrative, socio-economic and ecological considerations, into account.

²⁴ Pers.Comm. Centre for Eco-Environmental Sciences, Chinese Academy of Sciences representative

Progress towards an ecosystem based approach

Prior to 2014 there were two distinct types of Marine Spatial Planning approaches in China. These approaches were Marine Functional Zoning created by the State Oceanic Administration and Marine Environmental Functional Zoning created by the previous Ministry of Environmental Protection. The former focused on sea area use, while the latter focused on environmental protection. In March 2012, the State Council approved the release of a new round of the National Marine Functional Zoning (2011–2020). In the approval, the State Council stressed that Marine Functional Zoning is the legal basis for which marine resources can be reasonably exploited and utilised in order to effectively protect the marine ecological environment, and must be strictly implemented. In October 2012, Fujian provincial government published Marine Functional Zoning of Fujian (2011–2020).



Photo credit: G. He. View over Xiamen, south-east coast of China



The Marine Ecological Red Line (MERL) is a type of Marine Spatial Planning mechanism with ecological protection objectives. It has been partially implemented within China, but has only gained legal status in late 2014 and implementation in 2015, under which each province can develop their own Marine Ecological Red Line programme. It operates as an ecosystem-based approach, considering environmental protection, the protection of marine resources and economic development. In 2012, the State Oceanic Administration of China initiated the work of

demarcating the Marine Ecological Red Line approach in four provinces around the Bohai Sea, including Liaoning, Hebei, Tianjin and Shandong provinces. This supported the development of the 'Several Opinions on Establishing the System of Ecological Red Lines of Bohai Sea' report. In December 2013, Shandong province became the first province to establish the Marine Ecological Red Line system. The required management approach is broad, including prevention and control of marine pollution, land-based pollution control, marine and coastal engineering supervision, and fishery management. As part of a top-down Marine Spatial Planning system in China, the Marine Ecological Red Line approach is designed as a new process and national initiative to solve the problems of marine ecological environmental protection. This ecosystem-based approach supports sustainable economic development, while also ensuring protection of the marine environment.

A process of participation

Planning Integrated Coastal Zone Management can be a difficult process within the Chinese government due to the involvement of a large number of different departments, including the Forestry Department, Environmental Protection Agency and Oceanic Department. This approach requires high levels of collaboration. In order to improve communication between these departments, local governments have established leading groups for marine ecosystem management (for example, in Quanzhou). Integrated Coastal Zone Management focal points can engage with all relevant departments in planning through these groups. This allows for a more streamlined and inclusive process, where all relevant knowledge from the departments can be integrated into the Integrated Coastal Zone Management planning process. The incorporation of different government departments allows their needs to be balanced, for example on ecosystem protection and infrastructure development. The aim of increased communication and collaborative planning is to minimise conflict, and to produce more sustainable and long-lasting Integrated Coastal Zone Management plans.



Although the Integrated Coastal Zone Management process in China is currently primarily run at government level, there are some cases of public participation. Recently, the local governments have provided a number of practical ways for the public to participate, such as the ocean governance public hearing system, the leadership reception system, the Mayor's hot lines and mailbox and online public consultation, thereby directly promoting wider public participation in coastal management. The public can participate during the Environmental Impact Assessment (EIA) process of large-scale projects by providing comments and suggestions online. Increasingly the government is recognising the value of such participation and promoting it further, as shown by the production of a new regulation for public engagement – 'Measures for Public Participation in Environmental Protection' (2015). Furthermore, the Institute of Public and Environment Affairs (IPE), an NGO operating in China, has sought public opinion on pollution, by requesting public input through an online platform. The uptake of public participation has been increasing in China and the impact has been realised, with increasing public concern

for environmental issues and improvements in compliance with the national and local regulations. Although public participation is rising, the public, academia and NGOs could be further integrated into the planning process to enhance long-term resilience of Integrated Coastal Zone Management plans.

Conclusion

Through the consideration of both terrestrial and marine activities and their impact on the marine environment, balanced with consideration of stakeholder needs and the importance of ecological protection, China has been able to implement a successful Integrated Coastal Zone Management process. This has reduced the impact of pollution on the marine environment. Public participation in planning processes in China is improving, and has the potential to lead to the production of Integrated Coastal Zone Management plans which are even more sustainable and resilient.

5.3 Integrated Coastal Zone Management and Marine Spatial Planning in Croatia: A Case Study

Interviewee organisations: University of Zagreb Faculty of Science and PAP/RAC

Date of interview: 2 July 2018

Case study location: Croatia

Type of programme: N/A

Background

This case study provides a conceptual approach to marine planning, instead of focusing specifically on Marine Spatial Planning or Integrated Coastal Zone Management approaches. Integrated Coastal Zone Management legislation in Croatia recently came into force, meaning that implementation should be facilitated across the country. The ICZM-MSP Strategy in Croatia was built with PAPRAC's technical support. Having access to technical knowledge is can be very beneficial to supporting the delivery of these processes.

Progress towards SDG Target 14.1 on marine pollution

There has been some targeted action in Croatia demonstrating considerable success in managing marine pollution. In the Split, Solin, Kaštela and Trogir areas, most wastewater was collected into septic tanks. However, other wastewater was channelled into the sea directly, or indirectly, without being purified. Unfortunately this uncontrolled release of waste water led the Croatian Parliament to declare the Kaštela Bay as a pollution hotspot in the Adriatic part of Croatia in 1994. Through the initiative of the cities of Split, Solin, Kaštela and Trogir in the 1990s, the EKO Kaštela Bay (Eko-kaštelanski zaljev) Project was proposed for investment. The Investment Programs of Environmental Infrastructures of the Republic of Croatia achieved financing support from the World Bank for Reconstruction and Development and European Bank for Reconstruction and Development (EBRD). Split-Dalmatia County, Split, Solin, Kaštela and Trogir, and Croatian Water Supply and Drainage d.o.o. as an investor, established the Agency of EKO Kaštela Bay (Javna Ustanova Eko-kaštelanski zaljev), for the management of project preparation and construction activities in 1998. The EKO Kaštela Bay carried out the integrated coastal management project for the protection of the Kaštela Bay, improving drainage and purification of waste water and water supply in Split, Kaštela, Solin and Trogir Municipalities. The success of these projects meant that there is now considerable improvement in the water quality in the regions targeted.

Communication in governance

A strong legislative base is in place in Croatia, with regulations for Marine Spatial Planning and Integrated Coastal Zone Management originating from government. The involvement of multiple government ministries can increase the complexity of the planning and governance process. Knowledge-sharing between these ministries is key to effective governance, and increasing communication could strengthen the planning process. Regular and effective communication and consultation between government and stakeholders supports increasing compliance with these regulations. Involving stakeholders in the planning process can increase buy-in to regulations created at a central government-level. Furthermore, legislation processes that build buy-in at local levels of government would support increased commitment to comply with the regulations, leading to a reduction in conflict and the sustainable implementation of management plans.



Implementation of Marine Spatial Planning processes has been challenging in the Mediterranean, due to the existence of multiple national borders with a coastline and shared water bodies. Diffuse pollution is a concern in this region, and the transboundary nature of this issue means it is important to work to manage these inputs collaboratively, in order to address their cumulative impact on the marine environment.

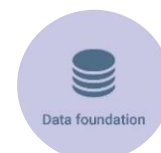
A strong institutional framework will support the effective implementation of legislation in Croatia. Establishing a leading authority to coordinate planning activities, and a Working Group consisting of management representatives and relevant stakeholders to ensure a participatory and inclusive process, can support the development of solutions that are ecologically, environmentally and economically sustainable.

Balancing tourism and ecosystem protection

Raising awareness of the importance of ecosystem services provided by coastal ecosystem is key to maintaining support for conservation measures. Tourism can have a negative impact on the marine environment, and therefore employing a holistic approach, to balance human and ecological needs, can support the sustainable use of coastal resources.

Mechanisms for pollution identification

The HAZADR project²⁵, *Strengthening common reaction capacity to fight sea pollution of oil, toxic and Hazardous substances in Adriatic Sea*, aimed to reduce



²⁵ Further information about the HAZADR project can be found at: www.adriawealth.eu/project/hazadr-2/

the risk of pollution in the Adriatic Sea by improving the capacity of Adriatic countries (including Croatia) to prevent and respond to shipwrecking and collisions, which are a major source of oil and toxic waste spills into the environment. A major output of this project was the development of ATLAS²⁶, a standardised system that warns emergency response services about risk factors in real-time, such as potential sources of pollutants (for example, oil-tankers) and heightened risk (for example, dangerous weather) in the Adriatic. By having access to information on real-time risks, emergency operators can be quickly deployed to limit environmental damage in the event of any collisions or shipwrecks.

Waste water management processes

The Coastal Cities Pollution Control Project 2 (CCPCP)²⁷ was a World Bank-funded programme from 2009-2015 which supported the development of wastewater treatment and collection systems in Croatia. At the start of the project, only 26% of households in participating cities could connect to wastewater services, and this increased to 72% by the end of the project. In addition, 14 new wastewater treatment facilities and 162 kilometres of wastewater treatment systems were constructed.

Key reasons for success

Capacity building through the Coastal Cities Pollution Control Project was an important part of realising improvements in Croatia's wastewater collection, treatment, and disposal abilities. Specifically, the project helped the National Water Agency (Hrvatske vode, HV) develop into a key institution for wastewater services and maintain investment in the country's wastewater infrastructure. The project supported Hrvatske vode in the preparation and implementation of a Water Management Strategy. By enabling ownership of the project by a specific agency, the Coastal Cities Pollution Control Project helped Croatia to continue project processes after the end of the funded project.

²⁶ Further information about the HAZADR Atlas is available here: www.msp-platform.eu/practices/hazadr-atlas-risk-scenarios

²⁷ World Bank Project Profile for the Coastal Cities Pollution Control Project projects.worldbank.org/P102732/coastal-cities-pollution-control-project-2?lang=en

5.4 Marine Spatial Planning in Indonesia: A Case Study

Interviewee organisation: USAID Sustainable Ecosystems Advanced (SEA) Project

Date of interview: 29 June 2018

Case study location: Indonesia

Type of programme: Marine Spatial Planning, within a larger integrated fisheries and marine resource conservation and management project

Background

The Indonesian government implemented a Marine Spatial Planning process between 2008 and 2015. Although regulation was in place, the implementation of this process was not effective, as only eight of thirty-four provinces worked to develop a marine spatial plan, while the rest struggled to finalise plans. In 2017, a new Marine Spatial Planning process was initiated in Indonesia, which provided clearer guidance and a strong mechanism to ensure implementation. The new process is supported by stronger leadership, a clearer management process and an accelerated deadline for finalisation of marine spatial plans. Although the process has only just begun, eight plans have already been finalised. The process will run for twenty years with a review process conducted every five years.

Marine Spatial Planning in Indonesia from 2008 to 2015

The Marine Spatial Planning process that ran from 2008 to 2015 had a number of different barriers to success. The Ministry of Marine Affairs and Fisheries oversaw the process and other Ministries would be invited to provide input to the plans. However, the feedback process was very long, which prevented many plans reaching the implementation phase. Furthermore, the plans did not encompass all human activities that were occurring in the area, and the permit system to ensure the correct utilisation of areas did not have a strong legislative basis.

Introducing a structured process

The new Marine Spatial Planning process, implemented in 2017, provided more structure, with improved guidance and public participation. The process provided much clearer guidance than the previous Marine Spatial Planning process, providing information on how to include stakeholders, collect data, identify zones and implement the plan. A key factor of success for the new process is the clear management mechanism, which was not a strong element of the previous process. There is a specific procedure for the development of Marine Spatial Planning which is outlined in Marine Spatial Planning regulation. The process is headed by a leading agency in each province (for example, a planning agency or an environment agency), and there is a requirement to report on progress every month to the secretary of the President, by clearly



defined deadlines. The Ministry of Marine Affairs and Fisheries (MMAF) provides the guidance to provinces in development of a marine spatial plan, and provide technical review support. The Ministry of Home Affairs within the national government has the responsibility to evaluate the draft marine spatial plans. The President has set a 2018 deadline for the finalisation of all marine spatial plans in Indonesia, and will hold back all investment in marine activities in a province until the plans are finalised. This creates an incentive for local governments to complete the process. The existence of a structured process outlined in national law ensures the long-term resilience of these plans.

Strength of leadership

Strong leadership from the national government has been of key importance for the success of the new Marine Spatial Planning process. In the previous process reporting was to the Ministry of Marine Affairs and Fisheries, but during this process it was difficult to engage other Ministries. In the new Marine Spatial Planning process, leading agencies are required to report to the President. To increase engagement and commitment to the process, the President has created a Working Group of individuals from concerned Ministries, to collaborate on the process. The President requires governors of each province to submit their Plan before the end of their term in administration. The submission of the Plan now forms part of the performance evaluation of the governor at the end of their term. Strong leadership from the national government is vital, but the national government is not always able to influence regional governments, therefore strong leadership from the governors of provinces has also been a key enabling factor in the success of the new process.

Funding from central government for the previous Marine Spatial Planning process was strong, however, a limited number of outputs were produced. Funding is more limited in the new process, however eight Marine Spatial Planning plans have been finalised with three further plans in progress. This indicates that it is not the size of the budget that is an enabling factor in the success of the Marine Spatial Planning process, rather it is the way in which the budget is managed and applied. In the new process, the budget is focused to facilitate dialogue between the central and provincial governments, which ensures they work effectively together to produce resilient marine spatial plans.

Barriers yet to be overcome

Despite the much stronger governance system in the new Marine Spatial Planning process, there are still some barriers to the successful implementation of these plans. Although resource use is more effective than in the previous Marine Spatial Planning process, the government has limited funding and requires funding from donors to support the process. Furthermore, some provinces require support in interpreting the regulations, as accessing the appropriate technical capacity and expertise can be a challenge. Marine Spatial Planning experts are needed to help provincial governments produce sustainable and effective plans. Political pressure can sometimes present a barrier to effective planning, where previous

agreements regarding coastal developments, for example, can cause friction during the identification of zones.

An integrated, inclusive approach

The previous Marine Spatial Planning process in Indonesia did not require all coastal human activities impacting upon the marine environment to be incorporated into a zoning plan. However, the Marine Spatial Planning process launched in 2017 requires the integration of terrestrial and marine activities into the plan, through an agreement with all relevant stakeholders. The national government requires the provincial government to identify relevant stakeholders from coastal communities, businesses, universities and NGOs to include in a forum. Stakeholders sign to prove their involvement in the process, and the minutes are made publicly available after the meetings.



The central government requires the provincial government to focus on certain priority activities. The forum representatives identify existing activities taking place in the area and plan for future activities. They discuss the harmonisation of terrestrial and marine activities in the coastal area. Using data collected on ecosystem condition and human activities in the area, the forum undertake a participatory mapping process to identify zones for specific activities. The results are sent to the Marine Spatial Planning Working Group in the national government to ensure activities do not impact social or ecological well-being.

Although a participatory approach is taken to Marine Spatial Planning, the specific procedure to involve stakeholders is not well described in regulation. Some provinces do not include stakeholders in the process as the importance of participatory planning is not made clear. Improving stakeholder participation is vital to reducing conflict between stakeholders and can enable the sustainable long-term implementation of the plan by increasing stakeholder buy-in and commitment.

Addressing transboundary issues

National government requires provincial government to form transboundary agreements to manage issues such as marine pollution. Although the national government requires provinces to make such collaborative management agreements, consequent follow-up mechanisms are not in place to establish whether these agreements have been implemented. Due to the interconnected nature of marine ecosystems, transboundary collaboration needs to be strengthened to ensure marine spatial plans address issues such as marine pollution.



Conclusion

In Indonesia, lessons have been learned from a previous Marine Spatial Planning process which failed to be fully implemented. As a result, a clearly structured, strongly supported, participatory process has now been developed. The new Marine Spatial Planning process has

already been more successful than the previous process in just one year. Some barriers still exist to the effective implementation of the current Marine Spatial Planning process, which need to be addressed to ensure the adoption of sustainable and effective marine spatial plans.

5.5 Integrated Coastal Zone Management and Marine Spatial Planning in Montenegro: A Case Study

Interviewee organisation: Ministry of Sustainable Development and Tourism, Department for Mediterranean Affairs (a unit responsible for coordinating Integrated Coastal Management activities in Montenegro)

Date of interview: 20 July 2018

Case study location: Montenegro

Type of programme: Integrated Coastal Zone Management and Marine Spatial Planning

Background

Montenegro has developed the National Strategy for Integrated Coastal Zone Management as a result of the Coastal Area Management Programme, which was in place between 2011 and 2014. The Programme supports regional frameworks, including the Barcelona Convention, which emphasises the importance of protecting the Mediterranean Coast and Sea through Marine Spatial Planning and the European *Acquis* within the Marine Strategy Framework Directive and Marine Spatial Planning Directive.

The Coastal Area Management Programme also supports other frameworks within the Adriatic region that highlight the importance of Integrated Coastal Zone Management and Marine Spatial Planning, such as the European Union Strategy for the Adriatic and Ionian Region (EUSAIR) and the Adriatic-Ionian Initiative (AII).

Therefore, the National Strategy for Integrated Coastal Zone Management represents an important strategic framework for the integration of different sectors. This framework aims to harmonise development priorities with measures for the protection and sustainable use of marine resources and the coastal zone.

Montenegro has also prepared and adopted in 2016 the National Strategy for Sustainable Development of Montenegro until 2030 which has fully incorporated the sustainable development goals and the UN Agenda for Sustainable Development until 2030. It defines principles, strategic goals and indicators, recognising the protection of natural capital as a key priority for sustainable development of Montenegro. Strategic goals related to the protection of natural capital are the following:

- preventing degradation of renewable natural resources,
- enabling efficient management of renewable natural resources,
- improving the status of environment and human health
- mitigating impacts of natural and anthropogenic hazards.

As part of the implementation of the Integrated Coastal Zone Management strategy for Montenegro, a comprehensive ecosystem approach was undertaken in a localised, pilot area of Boka Kotorska Bay. The Bay was selected as it exhibits characteristics of a vulnerable marine zone, with unique natural and cultural value, under strong human pressures. Using the lessons learnt and experiences gained from this pilot, this approach will then be applied in the implementation of the second component of the project “Implementation of the Ecosystem Approach in the Adriatic Sea through Marine Spatial Planning”, a Global Environment Fund Adriatic project,, which is being implemented in Albania and Montenegro.



A consultative process to identify priorities

Stakeholder engagement across sectors is seen as a priority in the development and application of national guidelines. During the preparation stages of the National Strategy for Integrated Coastal Zone Management, all relevant sectors were assessed and extensive consultations were undertaken at the national and local level.

Priorities within the action plan were identified in response to unsustainable trends in the marine environment. Pollution reduction was identified as a key area. Other priority areas include spatial planning, landscape preservation, cultural preservation, environmental protection, tourism, the green and blue economy, fisheries, and aquaculture.

National-level frameworks and monitoring programmes are currently under review and the annual assessment of the state of the marine environment has helped to identify gaps and priorities for upcoming implementation. Biodiversity and coastal hydrography were identified as key areas which needed to be addressed and 2018 marked the introduction of biodiversity monitoring. Previously, focus was on ecological objectives related to pollution and eutrophication. As such, a National Action Plan for the reduction of pollution from land-based sources has been developed and defines specific measures for implementation, as well as an investment portfolio consisted of eight investment projects. Data remains limited for marine litter and gear fishing but projects related to cleaning actions of the selected beaches and to some extent of the sea bottom, together with training and awareness raising activities, have been undertaken for such issues.



The pilot project in the Boka Kotorska Bay was conducted to design and test a methodology for Marine Spatial Planning, based on Ecosystem Approach (EcAp) indicators/IMAP of the Barcelona Convention. The process was consultative and involved participation of stakeholders, including the involvement of national and international experts. This will be replicated when scaling up to the national level; a larger, extended stakeholder consultation process is planned.

Overcoming limited capacity with linked up processes

Limited capacity has impacted data collection, monitoring and implementation. However, there has been a focus on linking up existing processes and utilising existing frameworks and monitoring programmes to coordinate and avoid duplication of effort. For example, a lack of baseline data is being actively addressed by ongoing and upcoming projects supporting the collection of previously identified missing information, and ensuring that available financial resources such as the Global Environment Facility and Interreg ADRION Project are used strategically. The development of a cross-institutional database is expected aid coordination greatly.



Revisions to methodologies are being undertaken through Global Environment Facility Adriatic, as well as the upcoming project supported by the IPA Adriatic Cross-border Cooperation Programme, to ensure the transposition and implementation of the Marine Strategy Framework Directive in Montenegro. The projects are aimed at improving data collection, drawing knowledge from existing national efforts. For example, the methodology for vulnerability assessments conducted on land during the Coastal Area Management Programme in Montenegro has been adapted for application to the marine environment and tested during the implementation of the Marine Spatial Planning pilot project in Boka Kotorska.

Application from local to regional scale

The Global Environment Facility Adriatic project will build upon the approach used during the pilot project in the Boka Bay in order to apply comprehensive understanding of local level implementation of Marine Spatial Planning to wide-spread national level application. This will require coordination and cooperation on the local, sub-regional and regional scale to ensure processes are aligned. The use of Ecosystem Approach indicators ensures the marine environment is assessed as a whole ecosystem, with considerations for biodiversity, fisheries, invasive species, coastal hydrography and pollution.

Supporting progress toward the achievement of Target 14.1 and 14.2

The sustainable management of natural resources, as a prerequisite for long-term conservation of natural capital, is the central theme of the sustainable development of Montenegro. It is therefore necessary to guide economic development towards a greener economy, efficient resource management and the protection of the scope, quality and potential of natural resources in order to ensure the provision of ecosystem services, primarily in protected areas. The conservation of natural resources raises certain questions, including how to solve problems generated by unsustainable nature resource management and consumption patterns, the mitigation or elimination of negative impacts of natural and anthropogenic hazards to nature resource status, as well as the reduction of impacts to human health caused by pollution.

Achieving the strategic objective of the facilitation of more efficient natural resource management is key in answering questions of unsustainable natural resource use. With the aim of establishing a future national ecological network, it is necessary to identify ecologically valuable habitats and ecosystems to enable proper managerial decision making. Revision to management is required, potentially including the re-categorisation of existing protected areas, in order to incorporate sustainable management models. It is also necessary to accelerate the process of marine protected area establishment and develop the appropriate capacities in order to fill the gap in expertise of this field in Montenegro.

Following the development of Montenegro's Integrated Coastal Zone Management strategy, the newly funded Global Environment Fund Adriatic Project aims to accelerate implementation of this strategy in the Adriatic Sea alongside Albania. The project began in October 2017 and participating countries have agreed to develop national integrated monitoring and assessment programmes which are based on the Ecosystem Approach Common indicators for assessing the status of marine areas, in line with the Ecosystem Approach and Integrated Monitoring and Assessment Programme of the Barcelona Convention.

A project titled the 'Promotion of Management of Protected Areas through Integrated Protection of Marine and Coastal Ecosystem of Montenegro' is in its implementation phase, having been produced in cooperation with UN Environment and approved by the Global Environment Facility in August 2017. It is expected that this project will support the establishment of three integrated marine and coastal protected areas, thereby substantially contributing to the establishment of Marine Natura 2000 network. Furthermore, the project will ensure collection of new data on the status of coastal biodiversity with the aim to contribute to establishment of the Natura 2000 network in the terrestrial areas of the coastal zone.

Stakeholder engagement

CEED Consulting led the stakeholder participative process, which included 48 in-depth interviews, 6 workshops, and sectoral analyses, and produced recommendations that were considered during the development of Montenegro's National Strategy for Integrated Coastal Zone Management.



Workshop participants noted that marine pollution, including noise pollution, were barriers to the development of coastal areas for tourism. Measures for pollution prevention and remediation were explicitly listed within the National Strategy.

The current vision of sustainable national development post-2015 in Montenegro is a product of the active participation of 8000 people; more than 1% of the national population. Consultations include the vision of sustainable development of Montenegro designated by the National Strategy for Sustainable Development in 2007, assessments of development

priorities during the Post-2015 National Consultations process²⁸ and the activities undertaken under the drafting of the new National Strategy for Sustainable Development.

The environment was identified as one of the biggest advantages of Montenegro in the national consultation report on Post-Millennium Development Goals²⁹. However, it was also noted that environmental potential is insufficiently used and experiencing rapid degradation. Stakeholder engagement continues to be a focus of marine protection and management in Montenegro³⁰. In September 2017, a Mediterranean Coast Day was attended by representatives from the Montenegrin government and other Mediterranean countries, as well as from institutions and civil society in Montenegro. As part of the event, the Public Enterprise for Coastal Zone Management organised educational workshops and activities for youth. Diving clubs experienced first-hand the important role that they have in the protection of the marine environment by participating in a seabed cleaning activity.

Conclusion

Montenegro has developed a strong national-level Integrated Coastal Zone Management strategy with an emphasis on stakeholder engagement and consultation at the local to the national and regional scale. The ecosystem approach was undertaken as an initial step towards Marine Spatial Planning introduction in Montenegro, drawing from lessons learnt from the comprehensive pilot study for application at the larger national scale. Annual assessment of the marine environment enables priority areas to be identified and targeted, integrating the improved monitoring programme of the marine environment. Monitoring processes are undertaken according to the regionally agreed indicators of the Integrated Monitoring and Assessment Programme of the Barcelona Convention. In order to address limited capacity, efforts have been taken to coordinate processes and ensure high quality, useful information is collected and made available. The efforts made in the framework of the implementation of the Barcelona Convention will represent a key step towards the full implementation of the Marine Spatial Planning Directive. All these activities will contribute to the adequate and timely implementation of the measures and sub-measures defined in the Montenegrin National Strategy for Sustainable Development until 2030, and therefore of the Sustainable Development Goals and Targets as defined in the United Nations Agenda 2030.

²⁸ Access the Report on Post-2015 National Consultations at: <http://www.un.org.me/Library/SDGs-Post-2015-and-MDGs/TheMontenegroIWant>

²⁹ *ibid*

³⁰ Further information about Coast Day in Montenegro in 2017: www.coastday.org/events/2017-montenegro-rc

5.6 Integrated Coastal Zone Management in the Philippines: A Case Study

Interviewee organisation: USAID Sustainable Ecosystems Advanced (SEA) Project

Date of interview: 27 June 2018

Case study location: Bohol Province, Philippines

Type of programme: Integrated Coastal Zone Management

Background

The Bohol Province Integrated Coastal Zone Management program initially operated from 1996 to 2005, across six municipalities, each with five or six sites. The program involved the participation of the local community to undertake coastal resource management plans leading to Integrated Coastal Zone Management. The plans made were initially focused on marine issues, but specific measures were included to address limited terrestrial issues. This includes land-based pollution and coastal development. The programme covered the jurisdictional boundary of the municipality up to 15 kilometres offshore. Plans were based on scientific and participatory processes, and reviewed and adapted every year. The authority to approve the plans fell within the remit of the local municipal governments. Due to the success of the programme in the Bohol province and several other cases in the Philippines, the Integrated Coastal Zone Management approach was officially adopted under national law.



Photo credit: A. White, Coral reefs with abundant fish-life attract thousands of divers and snorkelers annually to Bohol Island, Philippines

A bottom-up participatory process



Community participation within this project was a key factor contributing to its success. The Integrated Coastal Zone Management plan was created using participatory planning, through workshops, community consultation, village meetings and formal meetings at local government level, with representatives from each village. Traditional and local ecological knowledge was incorporated into the process in order to highlight threats and key priorities. As a result, there was a growing level of understanding within the local community of the Integrated Coastal Zone Management plan and acceptance of its importance. Municipalities shared ownership of the plan, establishing enforcement patrol teams and issuing fines to anyone in violation of the regulations. The local communities and their local government bodies took ownership of the development of appropriate solutions, helping to establish buy-in and a sense of local responsibility for the marine environment. This supported the sustainable implementation of the localised marine spatial plans.

The authority to approve the Integrated Coastal Zone Management plans fell to the local government. This ensured the local jurisdiction took ownership of the plans, a key enabling condition to their successful implementation. This approach also allowed for contextual differences affecting each site to be taken into account.

Using a scientific, ecosystem-based approach

An ecosystem-based approach was taken, combining ecological and economic needs, in order to accommodate tourism and biodiversity. The Integrated Coastal Zone Management plan was also informed by scientific data, in the form of biophysical surveys and in some cases the use of Marxan conservation planning software to support decision-making. Ecosystem-based approaches such as this support the sustainable management of an area, by working to balance the needs of people and ecosystems.



Adaptive management



The program is reviewed on a semi-annual basis, during which biophysical data is collected to study the condition of the ecosystem. Following analysis of the data, the Integrated Coastal Zone Management plan is refined and revised as required. This flexibility in the development of management approaches supports the long-term sustainability of ecosystem management, and incorporates new threats as required. The periodic revision of Integrated Coastal Zone Management programs are aligned with the cycle of planning and budgeting of the local government. This means changes are aligned with annual budgets, to support sustainable financing.



Photo credit: A. White, Typical tourist dive and island hopping boat in Bohol Island and Visayas, Philippines

Integrated consideration of all impacts on the marine environment

The integration of coastal and marine considerations into planning allowed land-based impacts to be addressed, such as pollution. However, as the boundary of the plan mirrored the jurisdictional boundary of the municipality rather than the entire watershed, the plan did not fully incorporate ridge-to-reef impacts. This led to some issues not being addressed by the program, such as deforestation and waste disposal and management.

The process required collaboration between municipalities sharing borders. This ensured transboundary issues, such as cross-boundary illegal fishing and in a few cases marine pollution, are adequately addressed by all municipalities affected.

Barriers

Although this approach was very successful, there were some barriers to the effective implementation of the approach. The provincial government had limited enforcement capacity, meaning that ensuring compliance with the regulations was heavily dependent on the local municipal governments and their communities. Despite the inclusion of all stakeholders in the planning process, there was still some cross-sectoral conflict. The main conflict was with fisheries; large fishing boats were restricted in their movement as they were

not allowed within the 15 kilometre zone from the shoreline. There were, however, known infringements to this regulation. Local enforcement by communities meant those found to be infringing the regulations could be prosecuted, where possible.

Conclusion

This Integrated Coastal Zone Management approach led to the establishment of more effective protected areas, despite increasing pressures from fisheries and population growth. Fisheries became more sustainably managed and nearshore habitats were protected. Participatory involvement of local government and communities, along with a scientific, adaptive and thorough approach to assessing and addressing impacts, were key for the success of this Integrated Coastal Zone Management programme.

6 Conclusion

This report demonstrates how area-based management approaches can contribute towards the delivery of Sustainable Development Goals through the application of integrated approaches which aim to provide considered and balanced management of marine and coastal activities. Conceptual guidelines, supported by practical evidence, illustrate the ways in which practitioners and decision-makers can apply Marine Spatial Planning and Integrated Coastal Zone Management approaches to support the achievement of Sustainable Development Goal Targets 14.1 and 14.2. A strong evidence base has helped to identify the different phases which should be considered, including:

- Issue identification and prioritisation;
- Stakeholder identification and engagement;
- Roles and responsibilities;
- Review existing frameworks;
- Participatory planning;
- Management plan;
- Implementation of plan;
- Monitoring and evaluation; and
- Adaptive review.

Within these phases, a number of associated attributes are highlighted to enable the effective application of Marine Spatial Planning and Integrated Coastal Zone Management. These attributes are drawn from the detailed Technical Report³¹ and describe attributes for successful implementation of Marine Spatial Planning and Integrated Coastal Zone Management, as drawn from 25 case studies. Each attribute may be applicable to multiple phases and should be considered for application throughout the phases of the conceptual guidelines. These attributes include:

- Spatial focus;
- Ecosystem approach;
- Adaptive management;
- Data foundation;
- Stakeholder engagement;
- Sector focus; and
- Transboundary focus.

Integration of these evidence-based conceptual guidelines into decision making can help to ensure that Marine Spatial Planning and Integrated Coastal Zone Management approaches can be effectively applied to support the delivery of Sustainable Development Goal Target 14.1, “to prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution by 2025”, and Target 14.2, to

³¹ The accompanying documents can be found at: wcmc.io/oceansdgs_technicalreport and wcmc.io/oceansdgs_summary

“sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience and take action for their restoration, to achieve healthy and productive oceans by 2020”.

Annex 1

The table below provides details for the documents assessed to identify key elements for Integrated Coastal Zone Management and Marine Spatial Planning, including policy documents, recommendations, and scientific reviews.

INTEGRATED COASTAL ZONE MANAGEMENT LITERATURE SOURCE	SOURCE	MARINE SPATIAL PLANNING LITERATURE SOURCE	SOURCE
European Commission DG Environment (2016). Integrated Coastal Management.	http://ec.europa.eu/environment/iczm/index_en.htm	European Commission (2018). Maritime spatial planning.	https://ec.europa.eu/maritimeaffairs/policy/maritime_spatial_planning_en
European Council (2002). Recommendation 2002/413/EC concerning the implementation of Integrated Coastal Zone Management in Europe.	http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002H0413&from=EN	European Union (2014). Directive 2014/89/EU of the European Parliament and of the Council establishing a framework for maritime spatial planning. Official Journal of the European Union	http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0089&from=EN
European Commission (2000). Integrated coastal zone management: a strategy for Europe. Official Journal of the European Union 27	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2000:0547:FIN:EN:PDF	IOC-UNESCO. Ehler, C. and Douvère, F. (2009). Marine spatial planning: a step-by-step approach toward ecosystem-based management. IOC Manual and Guidelines No. 53, ICAM Dossier No. 6. Paris: UNESCO.	http://unesdoc.unesco.org/images/0018/001865/186559e.pdf
European Commission (1999). Towards a European Integrated Coastal Zone Management strategy: General principles and policy options. A reflection paper.	http://ec.europa.eu/environment/iczm/pdf/vol1.pdf	WWF UK (2005). Marine spatial planning.	http://assets.wwf.org.uk/downloads/ma_ms_p_wa.pdf
UNEP/MAP/PAP (2008). Protocol on Integrated Coastal Zone Management in the Mediterranean. Split, Priority Actions Programme.	https://www.pap-thecoastcentre.org/pdfs/Protocol_publikacija_May09.pdf	MMO (2014). Marine planning and development. Guidance.	https://www.gov.uk/guidance/marine-plans-development
UNEP/MAP. Brachya, V. et al. (1994). Guidelines for integrated management of coastal and marine areas with special reference to the Mediterranean basin. Split, Croatia: PAP/RAC (MAP-UNEP).	https://pap-thecoastcentre.org/pdfs/ICAMguidelines.pdf	MMO (2016). Marine planning: a guide for local councils. Marine Management Organisation.	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/515522/Local_council_guide_-_marine_planning.pdf

INTEGRATED COASTAL ZONE MANAGEMENT LITERATURE SOURCE	SOURCE	MARINE SPATIAL PLANNING LITERATURE SOURCE	SOURCE
UNEP Caribbean (1995). Guidelines for integrated planning and management of coastal and marine areas in the wider Caribbean region. Kingston, Jamaica: UNEP Caribbean Environment Programme.	http://www.irf.org/wp-content/uploads/2015/10/GuidelinesIntegratedPlanningMgmtofCoastalMarineAreas.pdf	Defra (2009). Managing our Marine Resources: the Marine Management Organisation. Department of Environment, Food and Rural Affairs, Defra: London.	http://www.coastwisenorthdevon.org.uk/sites/default/files/MMO-brochure.pdf
Clark (1992). Integrated management of coastal zones. FAO Fisheries Technical Paper No. 327. Rome, FAO. 167p.	http://www.fao.org/docrep/003/t0708e/T0708E00.htm#TOC	UK Government (2011). UK Marine Policy Statement.	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69322/pb3654-marine-policy-statement-110316.pdf
FAO. Integrated coastal management law. Establishing and strengthening national legal frameworks for integrated coastal management. FAO Legislative Study 93.	http://www.fao.org/docrep/012/a0863e/a0863e00.pdf	CBD (2012). Marine spatial planning in the context of the Convention on Biological Diversity: a study carried out in response to CBD COP 10 decision X/29. Secretariat of the Convention on Biological Diversity and the Scientific and Technical Advisory Panel – GEF. Technical Series No. 68. Montreal.	https://www.cbd.int/doc/publications/cbd-ts-68-en.pdf
FAO (1998). Integrated coastal area management and agriculture, forestry and fisheries. FAO Guidelines	http://www.fao.org/docrep/W8440e/W8440e00.htm	NOAA (n.d.). Coastal and Marine Spatial Planning.	https://cmsp.noaa.gov/
IPCC (1994). Preparing to meet the coastal challenges of the 21 st century. World Coast Conference 1993. Conference Report.	http://www.coastalcooperation.net/documents/WCC93PreparingtomeettheCoastalChallengesofthe21stCenturywcc93conference.pdf	European Commission (2017). The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) in the Southern Ocean. Case study summary report.	https://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/450/original/UKN0207_CS_Summary_Report_CCAMLR_May2017.pdf?1498132234
IPCC. Nicholls, R.J. et al. (2007). Coastal systems and low-lying areas. Chapter 6 in: Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.	http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter6.pdf	HELCOM-VASAB (2010). Baltic sea broad-scale maritime spatial planning principles. Adopted by HELCOM HOD 34-2010 and the 54 th Meeting of VASAB CSPD/BSR.	http://www.helcom.fi/Documents/HELCOM%20at%20work/Groups/MSP/HELCOM-VASAB%20MSP%20Principles.pdf
UNCED (1992). Agenda 21.	https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf	Backer, H. (2011). Transboundary maritime spatial planning: a Baltic Sea perspective. J Coast Conserv 15: 279-289	https://link.springer.com/article/10.1007/s11852-011-0156-1

INTEGRATED COASTAL ZONE MANAGEMENT LITERATURE SOURCE	SOURCE	MARINE SPATIAL PLANNING LITERATURE SOURCE	SOURCE
OECD (2018). Recommendation of the Council on Integrated Coastal Zone Management. Adopted 1992. OECD/LEGAL/0268.	https://legalinstruments.oecd.org/api/print?id=42&lang=en	Gilliland, P.M. and Laffoley, D. (2008). Key elements and steps in the process of developing ecosystem-based marine spatial planning. Marine Policy 32: 787-796.	https://www.sciencedirect.com/science/article/pii/S0308597X08000675
The World Bank. Post, J.C. and Lundin, C.G. (1996). Guidelines for integrated coastal zone management. Environmentally Sustainable Development Studies and Monographs Series.	https://www.reefresilience.org/pdf/Post_Lundin_1996.pdf		
IOC-UNESCO (2006). A handbook for measuring the progress and outcomes of integrated coastal and ocean management. IOC Manuals and Guides 46; ICAM Dossier 2. Paris: UNESCO.	http://unesdoc.unesco.org/images/0014/001473/147313e.pdf		
CBD. AIDEnvironment, National Institute for Coastal and Marine Management/Rijksinstituut voor Kust en Zee (RIKZ), Coastal Zone Management Centre, the Netherlands. (2004). Integrated Marine and Coastal Area Management (IMCAM) approaches for implementing the Convention on Biological Diversity. Montreal, Canada: Secretariat of the Convention on Biological Diversity. (CBD Technical Series no. 14).	https://www.cbd.int/doc/publications/cbd-ts-14.pdf		
Guideline on Integrated Coastal Zone Management in the Black Sea.	http://www.blacksea-commission.org/Downloads/Black_Sea_ICZM_Guideline/Black_Sea_ICZM_Guideline.pdf		
Pickaver, A. and Ferreira, M. (n.d.). Implementing Integrated Coastal Zone Management at sub-national/local level – recommendations on best practice.	https://corepoint.ucc.ie/FinalDeliverables/Publications/BestPracticein_ICZM/Implementing%20ICZM%20at%20sub-national%20local%20level.pdf		