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International Guide on Marine/ Maritime Spatial Planning

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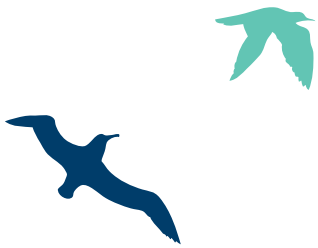

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International Guide on Marine/ Maritime Spatial Planning

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List of acronyms and abbreviations

ABNJ	Areas Beyond National Jurisdiction
AIS	Automatic Identification System
BGI	Blue Growth Initiative
CBD	Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
DG MARE	Directorate-General for Maritime Affairs and Fisheries of the European Commission
DMPA	Dynamic Marine Protected Area
EAC	Ecosystem Advisory Committee
EBA	Ecosystem-Based Approach
EBSA	Ecologically or Biologically Significant Area
EC	European Commission
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMODnet	European Marine Observation and Data Network
EU	European Union
EUNIS	European Nature Information System
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GIS	Geographic Information System
ICES	International Council for the Exploration of the Sea
ICZM	Integrated Coastal Zone Management
ILBI	International Legally Binding Instrument
IUU	Illegal, Unreported and Unregulated Fishing
JMA	Joint Management Area
IOC	Intergovernmental Oceanographic Commission of UNESCO
IMO	International Maritime Organization
LDC	Least Developed Country
LLDC	Landlocked Developing Country
MARPOL	International Convention for the Prevention of Pollution from Ships
MFZ	Marine Functional Zoning
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MPS	Marine Policy Statement

MSP	Marine/Maritime Spatial Planning
MUCH	Maritime and Underwater Cultural Heritage
NGO	Non-Governmental Organization
NM	Nautical Mile
NOAA	National Oceanic and Atmospheric Administration of the United States of America
OECM	Other Effective Area-Based Conservation Measure
PSMA	Port State Measures Agreements
PSSA	Particularly Sensitive Sea Area
Ramsar	Convention on Wetlands
RFMO	Regional Fisheries Management Organization
ROV	Remotely Operated underwater Vehicle
SAMP	Special Area Management Plan
SCA	Seascape Character Assessment
SDG	Sustainable Development Goal
SDI	Spatial Data Infrastructure
SEA	Strategic Environmental Assessment
SIDS	Small Island Developing States
SMART	Specific, Measurable, Achievable, Realistic and Time-Bound
SMARTIE	Specific, Measurable, Achievable, Relevant, Time-Bound, Inclusive and Equitable
SOLA	International Convention for the Safety of Life At Sea
SPP	Statement of Public Participation
SST	Sea Surface Temperature
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TSP	Transformative Scenario Planning
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
ZEEC	Coastal Ecological Economic Zoning

Glossary

Access restriction:
a management action to conserve biodiversity through restricting access to geographical areas or to the biological resources themselves. Particularly common in situations where there is an endangered species or ecosystem requiring protection for which no level of use is sustainable.

Accountability:
the responsibility to provide evidence to stakeholders and sponsors that a programme is effective and in conformance with its scope, policy, legal, and fiscal requirements.

Adaptive management:
a systematic approach for improving management through learning by monitoring and evaluating management outcomes. Simply put, it is 'learning by doing' and adapting what one does based on what is learned.

Allocation:
the share and delimitation of resources a user group gets from an established plan.

Anthropogenic:
human-induced.

Area-based management:
the regulations of human activity in a specified area to achieve conservation or sustainable resource management objectives.

Area closure:
the closure to fishing by particular gear(s) of an entire fishing ground, or a part of it, for the protection of a section of the population (e.g. spawners, juveniles), the whole population, or several populations. The closure is usually seasonal but it could be permanent.

Area to be avoided (ATBA):
an area within defined limits that should be avoided by all ships or certain classes of ships, in which navigation is particularly hazardous or in which it is exceptionally important to avoid casualties.

Areas beyond national jurisdiction (ABNJ):
those areas of the ocean (water column and seabed) for which no one nation has sole responsibility for management.

Artisanal fishery:
a fishery based on traditional or small-scale gear and boats.

Automatic identification system (AIS):
a short-range coastal tracking system used on ships and by vessel traffic services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships and VTS stations.

Baseline data:
the basic information gathered before a programme or activity begins, to be used later to provide a comparison for assessing impacts.

Baseline:
as defined by the United Nations Convention on the Law of the Sea, the line along the coast from which the seaward limits of a country's territorial sea and certain other maritime zones of jurisdiction are measured, such as a country's exclusive economic zone. Normally, a maritime baseline follows the low-water line of a coastal country.

Biological diversity:
the variability among living resources from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexities of which they are part; this includes diversity within species and of ecosystems.

Bioregion:
an area constituting a natural ecological community with characteristic flora, fauna and environmental conditions, and bounded by natural rather than artificial borders.

Blue economy:
the sustainable use of ocean resources for economic growth, improved livelihoods and jobs while preserving the health of ocean ecosystems.

Blue/Green infrastructure:
a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services.

Bottom-up management:
allows all levels of society to become a part of the process and helps to create a sense of ownership among stakeholders involved towards the achievement of the goal.

Buffer zone:
the region near the border of a defined area; a transition zone between areas managed for different objectives.

Carrying capacity:
the level of use, at a given level of management, at which a natural or human-made resource can sustain itself over a long period of time.

Climate change:
a change in the state of the climate that can be identified, using statistical tests, by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.

Coastal zone:
the area at the interface between land and sea, where the sea influences the land and the land influences the sea.

Coastal zone management:
a resource management system following an integrative, holistic approach and an interactive planning process in addressing the complex management issues in the coastal area.

Co-management:
a type of management in which responsibility for resource management is shared between government and resource user groups.

Compliance monitoring:
the collection and evaluation of monitoring data, including self-monitoring reports, and verification to show whether the performance of an activity is in compliance with the limits and conditions specified in its permit or licence.

Comprehensive plan:
a strategic document that identifies the principles, goals, objectives, guidelines, policies, standards and management actions for the future growth and development of an area – either on land or sea.

Connectivity:
directness of links and density of connections within and amongst ecosystems and uses.

Cost-benefit analysis:
a technique designed to determine the feasibility of a project or plan by quantifying its costs and benefits.

Cross-border issues:
issues which are relevant for two or more neighbouring countries only. Also apply within countries between administrative levels.

Cumulative impact:
the impacts (positive or negative, direct and indirect, long-term and short-term) arising from a range of activities throughout an area or region, where each individual effect may not be significant if taken in isolation, but collectively may impact and damage the environment.

Danger zone:
a defined permanent or intermittent area used for target practice, normally for the military.

Decision support tool (DST):
a wide range of computer-based tools, e.g. simulation models and/or techniques and methods, developed to support decision analysis and participatory processes.

Ecosystem:
a community or group of living organisms that live in and interact with each other in a specific environment.

Ecosystem-based approach:
a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.

Ecosystem-based management:
an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the goods and services humans want and need.

Ecosystem services/indirect use values:
the benefits provided by ecosystems that contribute to making human life both possible and worth living, e.g. flood control, water purification.

Enforcement:
the set of management actions that governments take to achieve compliance with regulations involving human activities to correct or halt situations that endanger the environment or the public.

Environmental fees/user charges:
compulsory, required fees for the use of an environmental good or service. These generate revenue that can be recycled to biodiversity conservation and increase the private cost of resource use.

Equity:
the condition in which society is characterised by justice, equality, impartiality and fairness, including fair and equal distribution of power, economic resources, opportunities, goods and services for society.

Eutrophication:
nutrient enrichment, typically in the form of nitrates and phosphates, and often from human sources such as agriculture, sewage and urban runoff. When this happens, usually because of pollution from land, plant life – phytoplankton or algae – proliferates.

Evaluation:
a management activity that assesses achievement against some predetermined criteria, usually a set of standards or management objectives.

Forecast:
a probable future (often used interchangeably with a 'prediction'); a description of a relatively unsurprising projection of the present. Forecasts can be either quantitative or qualitative.

Fragmentation:
the breaking of an area, landscape/seascape or habitat into discrete and separate pieces often as a result of land use/sea use change.

Geographic information system (GIS):
a conceptualised framework that provides the ability to capture, manage and analyse spatial and geographic data. It also connects data to a map, integrating location data (where things are) with all types of descriptive information (what things are like there).

Goal:
in MSP, a statement of general direction or intent. Goals are high-level statements of desired outcomes that you hope to achieve within the marine planning area.

Governance:
governance comprises the traditions, bodies and processes that determine how power is exercised, how citizens are given a voice and how decisions are made on issues of public concern.

Indicator:
information based on measured data used to represent a particular attribute, characteristic or property of a system. An indicator is a measure, quantitative or qualitative, of how close we are to achieving what we set out to achieve, i.e. our objectives or outcomes.

Integrated management:
an approach by which the many competing environmental and socio-economic issues are considered together, with the aim of achieving an optimal solution from the viewpoint of the whole community and the whole ecosystem, e.g. marine spatial planning.

Large marine ecosystem:
regions of the world's ocean encompassing coastal areas from river basins and estuaries to the seaward boundaries of continental shelves and the outer margins of the major ocean current systems. They are relatively large regions on the order of 200,000 km² or greater, characterised by distinct bathymetry, hydrography, productivity and tropically dependent populations.

Licence:
also known as permit or consent; a document giving the producer the right to operate according to the terms established by a regulating authority.

Management action or measure:
a specific action taken to achieve a management objective; management actions should also identify the incentives (regulatory, economic, educational) that will be used to implement the management action and the institution or institutional arrangement that has the authority to implement the management action.

Marine protected area:
a geographically defined marine area that is designated and managed to achieve specific (long-term biodiversity) conservation and sustainable use objectives (and that affords higher protection than the surrounding areas).

Marine (or maritime) spatial planning:
a public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process.

Metadata:
summary data providing content, quality, types and spatial information about a data set; used in GIS mapping and other applications.

Mitigation (or restoration) cost:
the cost of mitigating the effects of the loss of ecosystem services or the cost of getting those services restored.

Modeling:
the construction of physical, conceptual or mathematical simulations of the real world.

Monitoring:
the observation and recording of changes for the purpose of assessment of the progress and success of a plan.

Multi-use:
the joint use of ocean resources in close geographic proximity by either a single user or multiple users.

Natural capital:
the stocks of living and non-living resources that provide benefits and services needed by people and all life on Earth.

Normative:
an analysis leading to a recommendation or prescription that is based on value judgments or that reflects society's preferences.

Ocean domain:
by exclusion and for the purposes of marine spatial planning, it is the area beyond the coastal zone and, consequently, not regulated by integrated coastal zone management or equivalent planning concepts. It is legally divided into areas under national jurisdiction and areas beyond national jurisdiction.

Outcome:
an anticipated result of the implementation of a marine spatial management action.

Output:
a product or service delivered from a process or set of activities.

Performance monitoring:
the ongoing monitoring and reporting of programme accomplishments, particularly progress toward pre-established goals and objectives. Programme measures or indicators may address the type or level of programme activities conducted (process), the direct products and services delivered by a programme (outputs) and/or the results of those products and services (outcomes).

Perturbation:
the disturbance of the quality of natural resources caused by human activity/use or natural processes.

Planning:
the process of thinking about and organising the activities required to achieve a desired goal.

Pollution:
the introduction of substances or energy into the environment, resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems, and impair or interfere with amenities and other legitimate uses of the environment.

Precautionary principle:
applies when there are threats of serious or irreversible environmental damage and provides that a lack of scientific certainty shall not be a reason to postpone cost effective measures to prevent environmental degradation.

Primary productivity:
a measurement of plant production that is the start of the food chain. Much primary productivity in marine or aquatic systems is made up of phytoplankton, which are one-celled algae that float freely in the water.

Principle:
in MSP, an essential quality determining the fundamental nature of the marine spatial planning process, e.g. sustainability, precaution, transparency.

Provisioning services:
the products obtained from ecosystems, including, for example, genetic resources, food and fiber, and fresh water.

Public good:
a good or service in which the benefit received by any one party does not diminish the availability of the benefits to others and where access to the good cannot be restricted.

Qualitative data:
data in non-numerical form dealing with descriptions.

Quantitative data:
data in numerical form that can be measured.

Regulating services:
the benefits obtained from the regulation of ecosystem processes, including, for example, the regulation of climate, water and some human diseases.

Resilience:
the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Restricted area:
a delimited area for the purpose of prohibiting or limiting public access.

Risk assessment:
the identification of uncertainties and severity of adverse effects occurring to humans or the environment following exposure under defined conditions to a risk source.

Risk management:
the process of weighing management actions in the light of the result of a risk assessment.

Safety zone:
a defined area extending from a particular maritime infrastructure to protect and secure all operational services.

Scale:
the spatial extent of a geographic area under study.

Scenario:
a plausible and often simplified description of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces.

Sea use regulation:
the rules enacted for the regulation of any aspect of sea use, including zoning, use permits or area regulation, or any other regulation that prescribes the appropriate use or the scale, location or intensity of human activity.

Seascape:
a marine area where the interaction of people and nature over time has produced a space of distinct character with significant ecological, biological, cultural and scenic value.

Sectoral:
pertaining to an economic sector.

Spatial planning:
a key instrument for establishing long-term, sustainable frameworks for social, territorial and economic development both within and between countries.

Stakeholders:
the individuals, groups or organisations that are (or will be) affected, involved or interested (positively or negatively) by marine spatial planning management actions in various ways.

Strategic planning:
a type of planning by organisations or sectors aimed at improving the long-term effectiveness of operations.

Suitability analysis/maps:
the identification of the best location for a particular use according to multiple criteria.

Sustainable development:
a development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable use:
the use of natural resources in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

Top-down management:
a process of management in which management information and decisions are centralised and resource users are kept outside the decision-making process.

Trade-offs:
management choices that intentionally or otherwise change the type, magnitude and relative mix of services provided by ecosystems.

Traditional rights:
the rights of indigenous or traditional people that (to present) have not been considered in a national and international context or have not (yet) been recorded, and which are based on the legal system of the individual cultures.

Transboundary:
issues which are cross-border where impacts may extend across boundaries, not necessarily only immediate neighbouring countries.

Vision:
a desired or preferred future.

Zoning:
the separation of uses that are thought to be incompatible.

Introduction

Planning for sustainability and certainty to secure ocean prosperity

Since UNESCO's Intergovernmental Oceanographic Commission (IOC-UNESCO) and the European Commission's Directorate-General for Maritime Affairs and Fisheries (DG MARE) launched in 2017 their Joint Roadmap to accelerate marine/maritime spatial planning (MSP) processes worldwide[1], the number of countries that have initiated, advanced or approved their own MSP processes has increased significantly.

Through the active and effective participation of policy makers, representatives of maritime sectors, academia, citizens and other stakeholders in activities organised in all corners of the ocean, the MSPglobal Initiative has contributed to improving cross-border and transboundary cooperation where marine spatial plans already existed or were being prepared, and to promoting planning processes in regions where they have not yet been launched.

As we enter this new decade, the goal set by the Joint Roadmap remains today to triple the marine area benefiting from MSP, approved and led by governments and their citizens and effectively implemented in more than 30% of marine areas under national jurisdiction by 2030. This is in line with the 2030 Agenda for Sustainable Development and supported by national and regional initiatives in the framework of the United Nations Decades of Ocean Science for Sustainable Development and on Ecosystem Restoration.

Accelerating global planning processes together

Twenty countries now have plans approved and under implementation for their maritime jurisdiction (covering 22% of the world's EEZs). Further twenty-six countries are in the process of approving plans for their jurisdictional waters (covering 25% of the world's EEZs). This second group includes countries in the European Union mandated to have MSP plans by 2021, in Africa such as Kenya, Mauritius, Mozambique and Namibia, in America with excellent progress in Mexico, Peru and Uruguay, the same in South Korea, Iran and Japan in the Asian region, and in Oceania with many examples in Small Island Developing States such as Kiribati, Palau and the Solomon Islands.

It is worth noting that a further eighty-two countries have also committed to moving forward with the development of MSP processes in their maritime jurisdictions (covering 47% of the world's EEZs) and where planning is at an early stage. In many cases, these processes are initiated as the natural evolution of their coastal management plans or supported in the design of their national maritime policies or new national or regional sustainable blue economy strategies. In most cases, governmental engagement is initiated through pilot projects at local level or through cross-border intergovernmental projects with neighbouring countries at regional level.

1 https://www.mspglobal2030.org/msp-roadmap/

Shaping the future of international MSP and sustainable ocean governance

DG MARE and IOC-UNESCO operate in a spirit of cooperation and multilateral action, in which the challenges of ocean governance can be addressed with MSP as an important integrated planning framework to promote sustainable ocean governance. Indeed, the MSP process moves away from isolated sectoral management to take into account multiple economic, ecological and social objectives. This makes it possible to reduce conflicts and to promote coexistence and synergies in the maritime domain.

Both institutions, working together with their Member States and other international agencies, share the hope that the objectives of their Joint Roadmap become a reality in the next ten years. Hence, the importance of continued cooperation to create more opportunities at local and regional scale, sharing innovative ways of implementing MSP in diverse contexts and facilitating collaboration between neighbouring countries. We must recognise that land and maritime borders are the nexus of union and dialogue between our countries, and this is a legacy that we have an obligation to leave to future generations.

Committed to empowering planners in their own countries and regions

This guide complements a wide range of existing or ongoing initiatives on all continents. It is against this backdrop that it should be viewed, used and interpreted. In this way, each user can determine how they can combine or integrate the guide with their own needs, using it according to their objectives and capacities to develop fair, ethical and socially responsible planning.

It compiles experiences and lessons learned, with examples from all regions of the world. These are intended to contribute to the empowerment of local leaders, national experts, workers and planners, young or adult women and men, to lead planning processes in their own countries, because no one will do it better than them.

This is the reason for the emphasis on continuous capacity building and capacity enhancement. That will undoubtedly improve the management of resources, skills and knowledge of people and institutions to lead, contribute and effectively participate in planning processes. The outcome of this process will be a reinforced awareness of the role of the ocean for all of humanity.

1 About this guide

THIS CHAPTER DESCRIBES

- The purpose of this guide
- The main target audiences
- How the guide was developed
- How to use this guide
- Other existing guides

What is the purpose of the guide?

The *MSPglobal Guide* is the result of a joint initiative by the European Commission's Directorate-General for Maritime Affairs and Fisheries (DG MARE) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO, in order to support the development and implementation of marine/maritime spatial planning (MSP) processes worldwide.[1] The purpose of the guide is to assist governments, partners and MSP practitioners globally in the development of marine spatial plans, and to capture the evolution and lessons learned globally on MSP since the first guide was published in 2009 by IOC-UNESCO. The development of MSP as a practice is evolving to address new and emerging issues related to ecosystem-based management of the ocean.

Practically speaking, the application and implementation of MSP varies across geographic scales and jurisdictions, from local to national and transboundary. MSP can take many different forms, from high-level strategic plans to comprehensive plans with detailed implementation actions. MSP can be finalised as a policy document or signed into law and be legally enforceable – this guide is intended to help with the full range of MSP approaches.

The form of MSP that a particular geography may use relates to the current and future needs that the plan aims to address, and the scope and scale of the effort.

The best outcomes are reached when marine spatial plans involve all key stakeholders and are coordinated and integrated with sectoral policies and decision-making. In all cases, the defining qualities of MSP indicate that it is a public and participatory process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process (IOC-UNESCO, 2009). Marine spatial plans are forward-looking; a clear vision and purpose are essential for a well-developed long-term plan.

Who is the guide for?

This guide is developed to assist governments, stakeholders, communities and all relevant parties with the practice and design of marine spatial plans. The guide will be of interest to those with decision-making roles, including policy-makers, planners, local authorities and government officials at the local, national, regional and global level. It will also be of interest to practitioners and students of MSP. Furthermore, it may be useful for marine sectors, academics, private companies, consultants and civil society organisations to better understand the importance of their role, including how and when they can contribute to an MSP process.

This guide can be used to develop MSP training courses, teaching and learning interactions, develop or advance good practices, and to engage audiences who already have previous knowledge about spatial planning.

Why has the guide been developed?

The first IOC-UNESCO guide was published in 2009 to advance an ecosystem-based approach to planning and managing the ocean. Countries and territories around

1 Marine and maritime will be used interchangeably.

Figure 1.1
SDGs of the UN 2030 Agenda

the world have initiated or implemented their MSP processes, shaping the meaning of MSP due to new goals and objectives to be addressed, such as renewable energy, the achievement of 10% of marine protected areas (MPAs) by 2020 following the Aichi Biodiversity Target[2] of the Convention on Biological Diversity (CBD), and a growing need to consider additional themes such as the blue economy, transboundary MSP, climate change and the Sustainable Development Goals (SDGs) of the United Nations (UN) 2030 Agenda (**Figure 1.1**).

In this context, the next logical step for DG MARE and IOC-UNESCO was to encourage and strengthen transboundary MSP globally as a priority action of the Joint Roadmap to accelerate MSP processes worldwide.[3] This is also convergent with the efforts of the international community to promote the development of strategic action plans at transboundary scale to achieve long-term sustainable use of ocean resources (**Figure 1.2**).

During the past ten years, the MSP process has been applied in many different contexts, cultures and languages around the globe, making it possible to bring examples from new regions and continents, and to draw lessons from the application of the first IOC-UNESCO guide.

This experience shows that countries can organise MSP in different ways and still be successful. Thus, taking into account the lessons and challenges of using the 2009 edition, this new guide presents the marine spatial plan as different topics illustrated by lessons learned and case studies by topic, rather than as a clear sequence of steps.

How was the guide developed?

This guide was developed from the expertise and experience accumulated during the last decade by professionals working on technical, practical and conceptual aspects of MSP worldwide. The MSPglobal Initiative invited professionals from all regions of the world to take part in an international expert group which, over a period of two years, compiled and discussed lessons learned, approaches, challenges and opportunities for this new guidance, including a series of dedicated policy briefs.[4]

Regional consultations and international MSP forums took place between 2018 and 2021 in the Mediterranean, the Southeast Pacific, the Atlantic, the Caribbean, the Gulf of Guinea, Red Sea and Gulf of Aden, the Indian Ocean, the South China Sea and the Baltic Sea, including experts from Small Island Developing States (SIDS).

2 https://www.cbd.int/sp/targets/
3 https://www.mspglobal2030.org/msp-roadmap/
4 https://www.mspglobal2030.org/resources/msp-global-documents/

A series of national workshops on MSP implementation were jointly held with national authorities of Indonesia, Germany, Finland, China, the Netherlands and Mozambique to share their national practices and lessons learned. Other events were organised in collaboration with national authorities identifying the linkages in between MSP and sustainable blue economy in Africa, Latin America, Eastern Mediterranean and SIDS.

Dedicated thematic workshops and interviews were conducted in 2020 and 2021 in collaboration with the European MSP Platform,[5] the UN Global Compact[6] and LME:LEARN.[7]

A guiding principle in developing the guide was to showcase inspiring examples of MSP for users to consider and reflect upon, which they might apply in their own context according to the resources they have available.

How to use the guide?

This guide is designed to be used at any stage of an MSP process, from the initial or pre-planning phase to implementation, so that it can be opened at any chapter and to find information related to MSP topics, activities, case studies and actions. How the guide is used is up to the user and a structure has been developed for quick access to key topics that have surfaced in recent years. The content is intended to support the development of a diversity of MSP processes and plans, and is not intended to be prescriptive or take a 'one-size-fits-all' approach.

Links to other guides

The 2021 *MSPglobal Guide* joins an extensive list of documents with the aim and purpose of guiding decision-making in the field of ocean governance.[8] Following the pioneering initiative of IOC-UNESCO's 'step-by-step' approach, various international organisations, both governmental and non-governmental, academia and the private sector have produced documents of different types at the national or subnational level that directly or indirectly inform the advancement of MSP. In addition, there are even more documents designed to be applied at regional and global scales (UNESCO-IOC, 2021*a*).

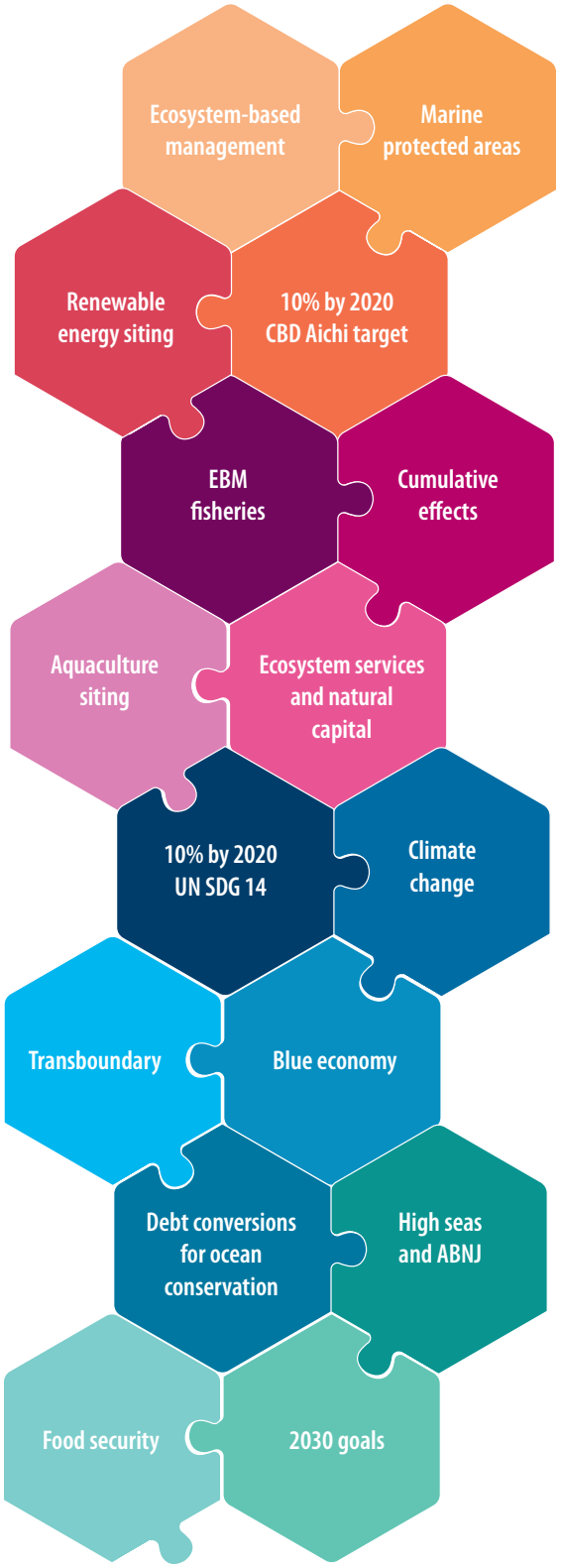


Figure 1.2
Evolution of the MSP concept from 2009 to present

Source: Smith, 2021.

5 https://www.msp-platform.eu
6 https://www.unglobalcompact.org/take-action/ocean
7 https://iwlearn.net/marine
8 https://unesdoc.unesco.org/ark:/48223/pf0000375502

2 MSP and ocean governance basics

THIS CHAPTER DESCRIBES

- **Key concepts, main principles and basic terminology**
- **Understanding the MSP processes**
- **Challenges in a changing world**
- **Transboundary planning perspectives**

The integrated nature of MSP means that it is connected to many other concepts associated with ocean and ocean governance. This chapter provides the basic concepts of MSP and ocean governance as a foundation for getting started on the planning process. Additional terminology can be found in the glossary.

2.1 Key concepts, principles and terminology

Coastal zone

A 'coastal zone' refers to a geographical area that connects terrestrial and marine ecosystems. A coastal zone may or may not include freshwater or tidal ecosystems like coastal wetlands and saltwater marshes. The precise spatial boundary of a coastal zone is not universally defined around the world and it can range from a few hundred to thousands of metres on either side of the high tide mark. From a public policy perspective, there is no standard definition of a 'coastal zone', as it is an area defined in national policy instruments that are based on the environment and/or the administrative units of a country.

The purpose of Integrated Coastal Zone Management (ICZM) plans is to manage activities and uses that directly or indirectly span the space between land and sea. The interactions are related to environmental (nature) or socio-economic systems (human activities) that influence both terrestrial and maritime territories of a country.

Ocean governance

Ocean governance can be defined as:

The way in which ocean affairs are governed, not only by governments, but also by local communities, industries and other stakeholders, which includes national and international law, public and private law, as well as custom, tradition and culture, and the institutions and processes created by them.[1]

Ocean domain

The ocean domain is that physical space that is defined as 'ocean' in three dimensions from the sea surface to the sea floor. This is different from legal and authoritative definitions of 'sovereign waters' (see **Maritime boundaries**). The emergence of MSP extends planning from the edge of the coastal zone to encompass all maritime space – the ocean – where states exercise sovereignty and sovereign or jurisdictional rights

The ocean domain includes shallow and deep waters from the coast beyond the oceanographic continental shelf and into the abyssal sea. Many different habitats, depths, features and physical processes occur in the ocean and knowledge of these is important for planning and understanding biodiversity, existing and future uses, and impacts from climate change. During the MSP process, published and unpublished hierarchical classification systems may be consulted in order to divide the ocean space and assist with plan development.

1 Borgese, 2001.

The outer boundaries of a marine spatial plan can usually be precisely defined from maritime boundaries, yet the inner or landward boundaries can be imprecise and subject to variability. This is because the discrete physical dimensions of the coastal zone are not universally defined (see **Coastal zone**) – especially those at the margins. For example, mangrove ecosystems occupy freshwater, terrestrial and marine areas and it can be difficult to spatially locate where the marine boundary starts. In these cases, a discussion during the MSP process would evaluate the available data and information and decision taken, so that the spatial mapping aspects of the MSP can progress.

The distinction between coast and ocean becomes more complex when considering the possibility of including 'land-sea interactions' in MSP. ICZM is referred to as a parallel and distinct design process, which should ensure 'consistency'. In addition, MSP should take into account the land-sea interactions, as identified through case-by-case (formal and informal) procedures (Lainas, 2018).

While the definition of planning areas should be guided by the spatial logic of ecosystems and the principles of the ecosystem-based approach, legal certainty and the corresponding operability of the plan are only possible within the boundaries of legally regulated areas (Maes, 2008).

Maritime boundaries

Maritime boundaries in this case are the legal definitions of waters under national and international law. The UN Convention on the Law of the Sea stipulates the general jurisdictional arrangements concerning the right of governance and regulation of sea areas. The right to draw up and enforce a marine spatial plan extends to the whole sea area of the acknowledged national jurisdiction in the territorial sea, as well as national sovereign rights and jurisdiction over certain matters in the EEZ and the continental shelf (**Figure 2.1**). Currently, no authority has the mandate to develop and enforce marine spatial plans for areas beyond national jurisdiction (ABNJ), which cover almost two-thirds of the ocean.

MSP is also contemplated as part of the broader concept of area-based planning defined in the draft text (draft, Art. 1.3) of the new international legally binding instrument (ILBI) being negotiated under the United Nations Convention on the Law of the Sea (A/CONF.232/2019/6, 17 May 2019). The understanding and application of maritime boundaries in developing MSP is essential, including awareness of national and international rights, such as the right of safe innocent passage.

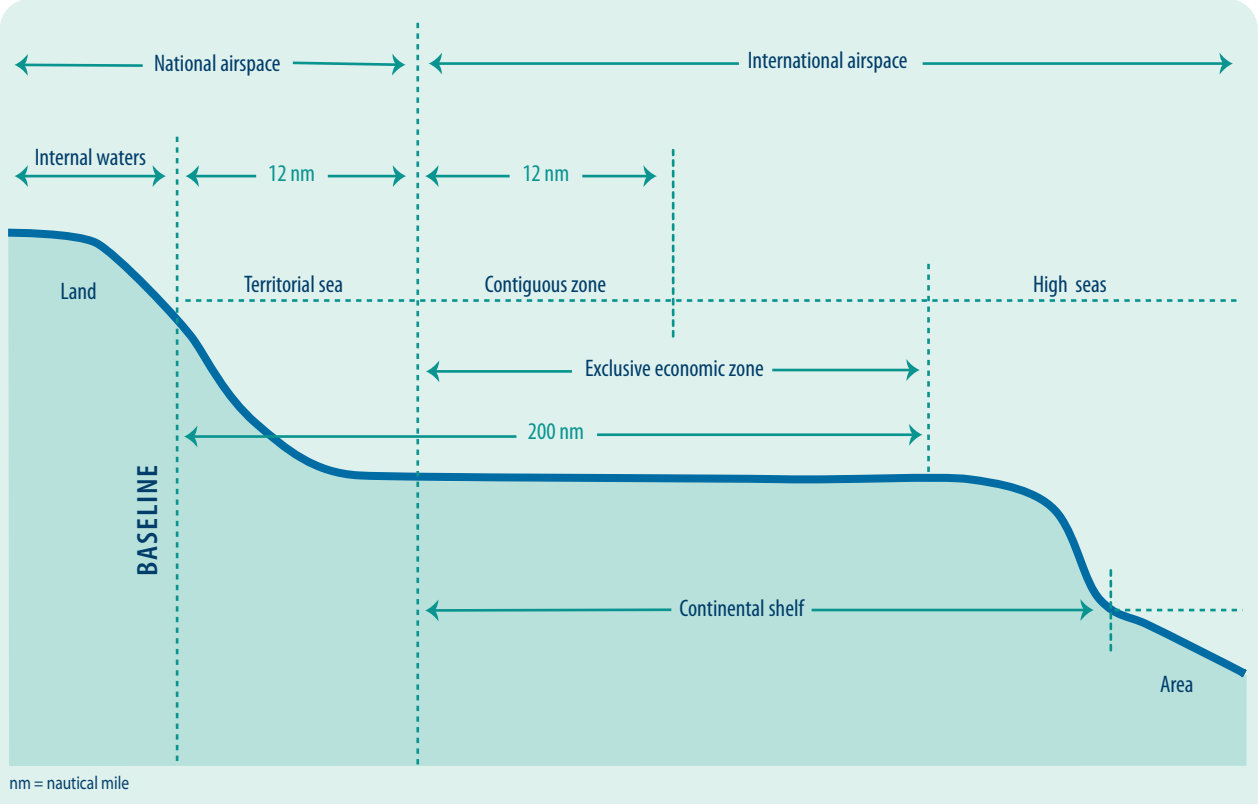


Figure 2.1
Legal boundaries of the ocean and airspace

Source: Adapted from International Institute for Law of the Sea Studies.

Marine/maritime spatial planning (MSP)

MSP is a comprehensive and strategic process to analyse and allocate the use of the sea areas to minimise conflicts between human activities and maximise benefits, while ensuring the resilience of marine ecosystems. It typically addresses many sectors, their interrelationships and cumulative impacts, and provides for spatial and temporal measures to steer different uses of the sea areas or resources. Spatial measures can be, for instance, allocation of space for particular uses (and exclusion of uses) or place-specific or general conditions for the use of sea areas or resources. MSP documents may also highlight important areas and societal preferences without explicit spatial dimensions. From a development perspective, MSP is an inclusive process trying to address the needs of society as a whole within environmental limits.

In many countries, MSP is intended to be complementary to the existing marine management structures. It adds important new elements and measures to reach the agreed environmental, social and economic objectives. The MSP process takes sectoral management into account and may use it as a basis for planning provisions, but MSP does not replace single-sector management measures.

In countries where marine management is nascent or does not cover all significant sea uses, the MSP process can be used as an opportunity to improve overall marine management. In such cases, MSP and the solutions it provides are not limited to allocation of space or other distinctively spatial measures. The MSP process can then be an opportunity for the development of a comprehensive marine governance system.

Australia defined in its Oceans Policy (Commonwealth of Australia, 1998) the concept of ecosystem-based oceans planning and management aiming to ensure the maintenance of ecological processes in all ocean areas, including, for example, water and nutrient flows, community structures and food webs, and ecosystem links; marine biological diversity, including the capacity for evolutionary change; and viable populations of all native marine species in functioning biological communities.

Blue economy (and related concepts)

'Ocean' or 'maritime' economy is the sum of ocean-based economic activities, assets, goods and services. It covers a wide range of established sectors, such as fisheries, maritime transport and tourism, as well as emerging sectors, such as offshore renewable energy, aquaculture and marine biotechnology.

An ocean economy can be defined as either 'brown' or 'blue', with 'blue' indicating sustainable growth and 'brown' indicating unsustainable growth (Patil et al., 2018). According to the World Bank (2016), 'a **sustainable ocean economy** emerges when economic activity is in balance with the long-term capacity of

TIP

The Intergovernmental Oceanographic Commission (IOC) of UNESCO (2009) defines MSP as:
A public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process.

The National Ocean Council of the United States of America (2013) defines MSP in its handbook as follows:
Marine planning is a science- and information-based tool that can help advance local and regional interests, such as management challenges associated with the multiple uses of the ocean, economic and energy development priorities, and conservation objectives.

The European Union (EU) Directive 2014/89/EU establishing a framework for MSP (EULEX, 2014) defines MSP as:
A process by which the relevant Member State's authorities analyse and organise human activities in marine areas to achieve ecological, economic and social objectives. Through their maritime spatial plans, Member States shall aim to contribute to the sustainable development of energy sectors at sea, of maritime transport, and of the fisheries and aquaculture sectors, and to the preservation, protection and improvement of the environment, including resilience to climate change impacts. In addition, Member States may pursue other objectives such as the promotion of sustainable tourism and the sustainable extraction of raw materials.

Table 2.1
Challenges to delivering a blue economy

Threats to ecosystem services
• Pollution • Marine litter • Climate change • Eutrophication • Habitat destruction • Overexploitation of living resources • Invasive species
Governance issues
• Lack of resources • Lack of governance integration • Lack of sectoral collaboration • Lack of transboundary collaboration
Sectoral issues
• **Fisheries:** overexploitation of resources and illegal, unreported and unregulated (IUU) fishing • **Offshore renewable energy:** environmental impacts, spatial use conflicts and social acceptance • **Seabed mining:** environmental impacts and spatial use conflicts • **Tourism:** environmental and social impacts of mass tourism and non-regulated recreational activities • **Maritime transport:** environmental impacts such as air pollution, releases of ballast water containing aquatic invasive species, historical use of antifouling agents, oil and chemical spills, underwater noise pollution and collisions with marine megafauna

Source: UNESCO-IOC, 2021*b*.

Figure 2.2
Factors promoting a blue economy

Source: UNESCO-IOC, 2021*b*.

ocean ecosystems to support this activity and remain resilient and healthy', thus the '**blue economy** concept is a lens by which to view and develop policy agendas that simultaneously enhance ocean health and economic growth, in a manner consistent with principles of social equity and inclusion'.

Similarly, but specifically for the fisheries and aquaculture sectors, the FAO (2018) developed a Blue Growth Initiative (BGI) that 'aims at supporting more productive, responsible and sustainable fisheries and aquaculture sectors by improving the governance and management of the aquatic ecosystems, by conserving biodiversity and habitats, and by empowering communities'.

More recently, at regional level, the European Commission (2021*a*) adopted a new approach for a sustainable blue economy in order to align the blue economy concept with the European Green Deal and recovery strategy. This approach aims 'to build a resilient economic model based on innovation, a circular economy and a respectful attitude to the ocean', meaning that 'businesses that use or generate renewable resources, preserve marine ecosystems, reduce pollution and increase resilience to climate change will be incentivised, while others will need to reduce their environmental footprint'.

MSP serves as a decision-making process to determine the ordering of human activities and to facilitate the achievement of or shift towards sustainable paths in meeting the economic, environmental and social needs of societies. In practice, MSP is considered an enabler of the blue economy because it:

- identifies sites for new and emerging uses following an ecosystem-based approach
- mitigates conflict
- promotes multi-use spaces for coexistence and synergies
- increases investor confidence by introducing transparency and predictability
- facilitates filling critical knowledge gaps on the ocean and key sectors
- can foster collaboration across borders for regional development
- promotes capacity building through innovative and transformative technologies

Ocean multi-use

'Multi-use' refers to the intentional joint use of the same ocean space and/or of resources in close geographic proximity by two or more activities. Indeed, the term covers different situations in which maritime uses are (or may be) combined in at least one of the following four dimensions: spatial, temporal, provisioning and functional.

The application of the ocean multi-use concept can contribute to a more space efficient and sustainable use of the ocean, bringing in additional environmental and socio-economic benefits. Multi-use has been considered and used in many of the EU MSP processes, especially for a more sustainable and symbiotic integration of new coming uses in already busy spaces.

Therefore, depending on the type of interaction between the uses and their physical distance the multi-use can be classified as: i) multi-purpose/multifunction; ii) symbiotic use; iii) co-existence/co-location; or iv) subsequent use/repurposing (**Table 2.2**) (Schupp et al., 2019). Multi-use includes the combination of offshore wind farms and fisheries, tourism and aquaculture or multi-purpose offshore platforms.

Marine management

'Marine management' refers to sectoral regulation of human activities at seas, e.g. catch quotas or technical regulations for fisheries, or safety of navigation regulations for shipping. It also covers marine environmental protection measures, such as limitations on emissions or environmentally harmful practices. Sectoral regulations may also include spatial measures but for the purposes of this guidance document, it is useful to make a distinction between 'marine management' and 'spatial planning'.

2.2 Understanding MSP

2.2.1 Integrating terrestrial, coastal and marine planning, including land-sea interactions

In many cases, coastal and marine areas have unclear limits, which explains the need for connecting both coastal and maritime planning actions. In this way, 'planning systems' can be created with the aim of coordinating policies and providing

Table 2.2
Recommendations from the multi-use action plans

Recommendations for	Type 1 Multi-purpose/ multi-functional	Type 2 Symbiotic use	Type 3 Co-existence/ Co-location	Type 4 Subsequent use/ repurposing
Policy (macro-regions/nations/ regions)	Provide financial incentives and sureties for development of new technologies and combinations	Mainstream and include multi-use concept on all relevant policy levels	Clarify rights and responsibilities of different users to ocean space	Adopt clear legal frameworks and clarify liability rules (between current and future platform users), allowing for better management of expectations and predictability
Regulation (nations/regions)	Develop and deploy joint licensing procedures for multi-use development throughout entire life cycles	Identify and apply site selection criteria to establish viable multi-use sites in managed waters	Ensure that effective cooperation and mediation mechanism are in place between representatives of all sectors (i.e. working groups)	Develop general suitability criteria as to which sites and types of installations are suitable, for which type of reuse
Research (academia/industry)	Identify and address gaps in current knowledge about safety, benefits and drawbacks and create decision support systems	Identify operational overlaps allowing for the sharing of cost for supporting services and infrastructure	Gather and communicate data about compatibility of uses	Carry on time series research about long-term local impacts of maritime infrastructure and installations to ecosystems
Industry (corporations/ associations)	Develop pilot sites to showcase and advance new technology in the field	Formulate exemplary benefit and cost sharing agreements between involved actors	Facilitate industry wide capacity building regarding opportunities and operations	Suggest suitable investment mechanisms to facilitate re-use of installations after initial lifespan

Source: Schupp et al., 2019.

Table 2.3
Examples of ICZM and marine spatial plans, and their geographical extent

Name of plan/policy	Geographical extent			
	Landward	Coast	Inshore	Offshore
Belize Integrated Coastal Zone Management Plan (2016)	3 km inland to high water	High water to 12 NM	Low water; fringing reef; three defined atolls to 12 NM or 3 NM	N/A
Trinidad and Tobago Draft Integrated Coastal Zone Management Policy Framework (2020)	90 m contour to 5 m contour	5 m contour to low water	Low water to 12 NM	12 NM to 200 NM (or international border)
MSP for the period 2020 to 2026 in the Belgian sea areas (2019)	N/A	N/A	Low water to 12 NM	12 NM to international borders
Ireland – National Marine Planning Framework (2021)	N/A	High water to baseline	Baseline to 12 NM	12 NM to 200 NM (or international border)

Source: UNESCO-IOC, 2021c.

coherence for territorial actions, especially for coastal areas (themselves composed of land-sea interfaces).

While the integration of marine and coastal planning is a standard element in many coastal-marine policies (**Table 2.3**), their integration with terrestrial planning, which has a long-standing history, is less so. While the coastal-marine articulation is evident, the construction of systems linking these three domains is less common. This is due to their complexity, the difficulty of concentrating administrative competencies in a limited number of institutions, and the unprecedented nature of marine planning. The standardisation of marine policies with the corresponding phenomenon of displacement towards the regional and local levels of administration seems to be a trend in progress, and in this context, it will be easier for territorial policy wand planning to build complex systems of integrated management of terrestrial and marine spaces.

2.2.2 Ecosystem-based approach

MSP is expected to apply an ecosystem-based approach (EBA) by ensuring that spatial distribution and related decision-making considers the principles and elements of EBA.

The CBD (2000) defines the ecosystem approach as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention and it is based on the application of appropriate scientific methodologies focused on levels of biological organisation which encompass the essential processes, functions and interactions among organisms and their environment. It recognises that humans, with their cultural diversity, are an integral component of ecosystems.

The coupling of MSP and EBA ensures that planning looks beyond jurisdictional boundaries, cumulative impacts are considered, a precautionary approach is applied, and planning is adaptive (Ansong et al., 2017). Particularly, the application of EBA in a transboundary context is critical, as marine ecosystems may span national jurisdictional boundaries. In this case, it is useful to consider which EBA tools and mechanisms can support its application in national and transboundary MSP, while acknowledging the disciplinary and jurisdictional realities and differences. Strategic Environmental Assessment, for example, is an important tool for implementing EBA in MSP (Eb-MSP). This assessment, which evaluates the potential impacts of the plan, can run parallel to the MSP process or can be conducted as a one-time assessment during a particular planning stage. Experience gained over the past years, however, has shown that as both environmental and socio-economic goals are important to be accomplished under an Eb-MSP approach, capabilities and political will also need to be further developed (Ehler, 2020).

2.2.3 Multisectoral approaches

Planning the maritime territory was traditionally done through sectoral policies that often did not consider the presence and impact of other sectors, resulting in a series of conflicts between users. Sectoral policies do not always consider spatial aspects, which can lead to conflicts over the use of the sea areas. On the other hand, MSP emerged as a multisectoral approach with an explicit spatial perspective, aiming to coordinate and facilitate negotiation among sectors and societal actors in order to solve current conflicts, as well as avoiding potential future ones (Ehler et al., 2019).

Indeed, successful MSP refers to bringing actors from different sectors and action arenas to exchange visions, interests, concerns and work together in an integrated way towards developing a holistic and widely acceptable plan. The introduction of an MSP framework rarely replaces existing sectoral policies or plans, but adds a stronger coordinating element to marine governance (**Figure 2.3**). This can lead to changes in sectoral policies when they are later reviewed. In addition, national marine spatial plans can foster other multisectoral policies, such as blue economy strategies.

2.2.4 Participatory approach

One of the guiding principles for MSP is the participatory approach. An inclusive participatory approach means the active engagement of stakeholders in the process of developing and implementing a public policy addressing societal needs. It also improves the legitimacy and quality of decision-making processes, builds trust and is widely viewed as leading to decisions that are more durable than those without participation (Fox et al., 2013; Sayce et al., 2013).

As integration of concerns and interests is fundamental to MSP, the adoption of efficient and transparent participatory approaches across government bodies (e.g. ministries with different mandates), sectors and action groups (horizontal integration), as well as between government levels (i.e. national, regional, local – vertical integration) are of crucial importance.

The term 'stakeholder' does not have a universal definition or the same meaning in all languages, although it is widely accepted to refer to those individuals, groups or representatives of specific groups with an interest or direct involvement in policy development or its direct outcomes.

In the context of MSP, stakeholders include representatives, workers or those affected by all maritime sectors, governmental and non-governmental marine related organisations,

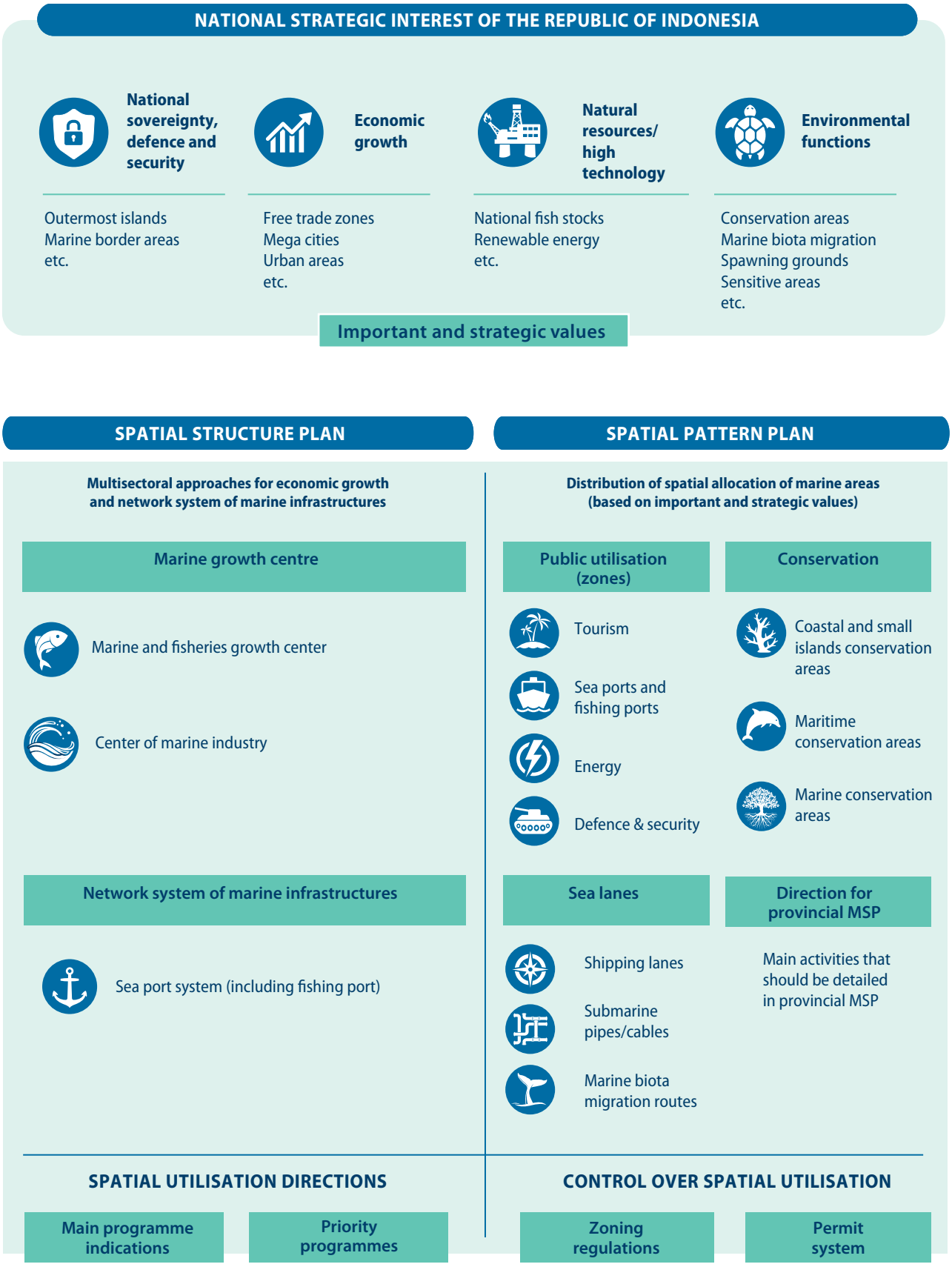


Figure 2.3
Multisectoral approaches of MSP in Indonesia

Source: Ministry of Marine Resources and Fisheries of Indonesia.

academia, non-profit organisations and civil society, among others. Depending on the country and the extent of their marine spatial plans, the government bodies can also be considered as public stakeholders.

It is important to define 'stakeholder' in the specific context of your MSP, and to identify and engage with these entities for the decision-making process. Stakeholder engagement frameworks will capture the full representation of the values and experiences.

2.2.5 Cross-border and transboundary cooperation

Cross-border MSP refers to engagement between two entities that share a common (agreed or disputed) political border (e.g. neighbouring countries, regions, provinces or municipalities) on marine planning issues.

Transboundary MSP refers to the engagement of multiple entities (e.g. countries, states, provinces) across one sea area, which do not necessarily share common issues for marine planning. 'Transboundary' expands beyond 'transnational', as it might encompass 'subnational' (**Figure 2.4**) as well as the high seas. Similar to transnational MSP, each entity has individual jurisdiction over different ocean spaces, different economic considerations, drivers for MSP, etc.

The aims of transboundary cooperation may also range from 'trying to avoid obvious mismatches at borders' to technical collaboration between countries to ensure coherence of the plans and to foster cross-border synergies. It can also be considered in terms of 'functional coherence', which focuses on how the plan steers different human activities in spite of differences in cartographic presentations.

When developing MSP, it is important to acknowledge existing transboundary mechanisms for specific ocean matters. Indeed, there are already examples of such mechanisms clearly fostering MSP (**Box 2.1** and **Box 2.2**) or aspects related to maritime activities (**Box 2.3**).

2.2.6 'Binding' vs 'guiding' MSP policy

The legal strength of marine spatial plans varies from advisory policy to regulatory. In some cases, plans are legally enforceable and the directions are mandatory ('binding'); other plans are designed to be 'guiding', incorporating elements that are stipulated in existing, strongly binding policies.

These terminological nuances lead to a central question regarding the capacity of these different documents to ensure a certain degree of compliance and to bind the different parties involved in the development of regulatory instruments and processes. It does not seem advisable to argue that MSPs, in and of themselves, should respond to the mandatory-indicative dilemma, as the decision will depend to a large extent on the planning system in place in each country.

In the context of the European Union, the provisions of Directive 2014/89/EU on MSP oblige Member States to draw up plans, although this obligation does not affect their power to determine the way in which the objectives are set out in such plans. In fact, the rules of transposition into the respective national legislation may not state whether such plans are statutory or indicative (e.g. Italy and Spain) or contain an explicit provision on their binding nature (e.g. Portugal).

However, a common element in MSP guidance documents relates to implementation and enforcement (existing or potential), including the categorisation of non-compliance and corresponding sanctions.

Further reading source

For a detailed treatment of enforcement and compliance in MSP, see: Environmental Law Institute. 2020. ***Designing Marine Spatial Planning. Legislation for Implementation. A Guide for Legal Drafters.*** Blue Prosperity Coalition, p. 46 et seq. https://www.eli.org/sites/default/files/eli-pubs/msp-law-workshop-report-11may20-final.pdf

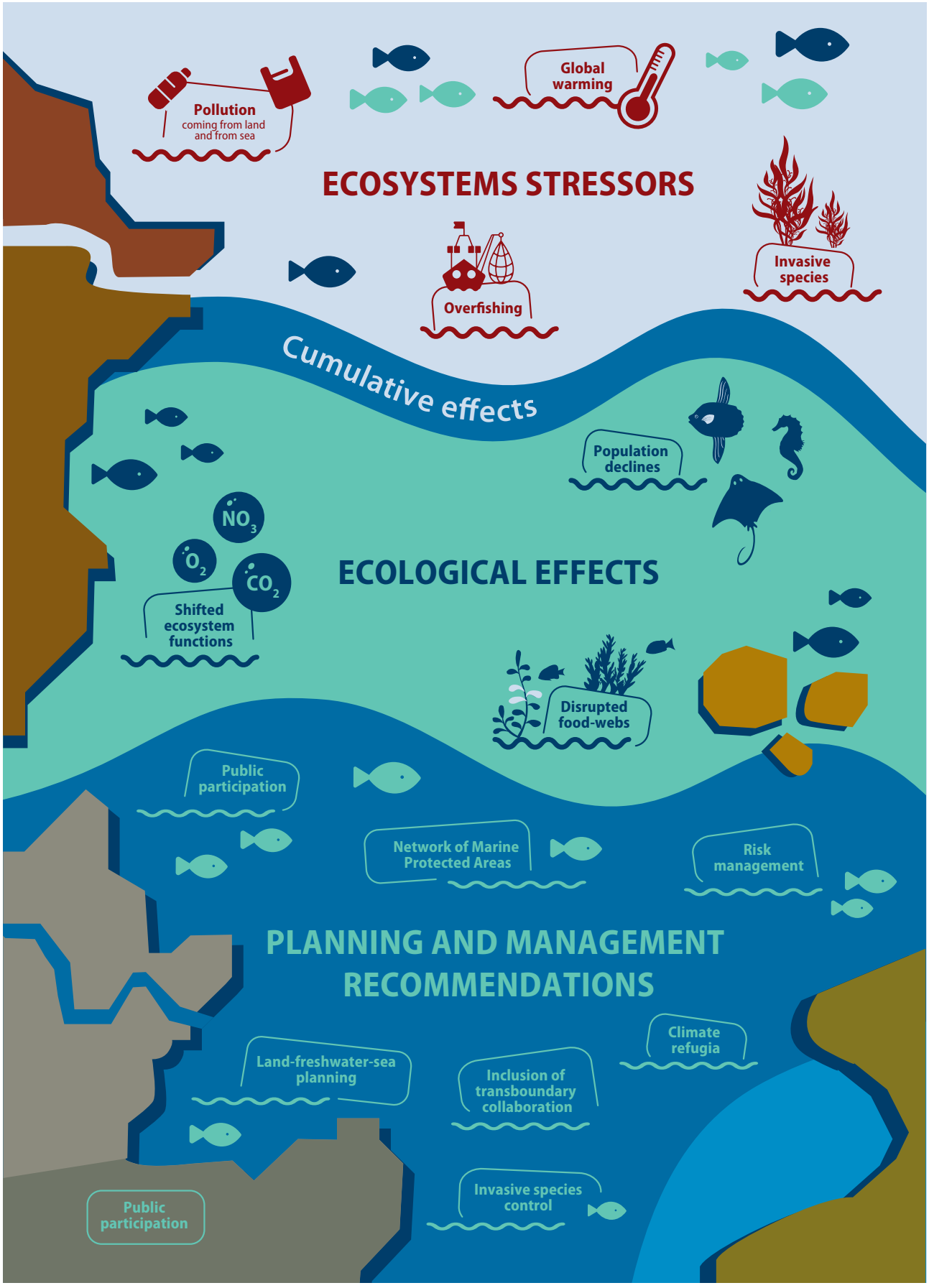


Figure 2.4
Cross-border and transboundary MSP

Source: Adapted from Katsanevakis et al, 2020.

Box 2.1

Multisectoral and intergovernmental MSP framework for sustainability (Benguela Current Commission and MSP in South Africa, Namibia, Angola)

The Benguela Current Large Marine Ecosystem (BCLME) is richly endowed with both living and non-living resources – from large oil and gas reserves to abundant fisheries and unrivalled natural beauty. The Benguela Current Commission (BCC) is a multisectoral and intergovernmental initiative established by Angola, Namibia and South Africa in 2007 to promote the vision of the BCLME: sustaining human and ecosystem well-being for generations. The BCC provides the legal and transboundary marine governance framework with representation from senior and ministerial levels advised by the permanent expert-led panels: the Ecosystem Advisory Committee (EAC), Finance and Administration Committee, and Compliance Committee. Within the framework of the BCC, a regional working group on MSP was created in 2016 which comprises five government officials from each country, including key sector ministries and departments, relevant officials from the development planning offices, as well as technical experts and civil society.

The Marine Spatial Management and Governance Programme (MARISMA) of the BCLME promoted sustainable ocean use in the Benguela Current, focusing on implementing MSP, therefore the three countries were the first in Africa to start developing MSP. MSP was used as an integrative process that engages a wide range of stakeholders and across borders. Government departments, industry, non-governmental organisations (NGOs) and communities cooperate in working towards an agreed marine plan that is supported by stakeholders and implemented by public authorities. The BCC countries have divided their marine jurisdictions into subnational planning units in order to implement MSP in a more manageable and meaningful way (**Figure 2.5**). The BCC framework ensures coherent approaches to MSP between the three countries concerning process design, data governance and spatial management (e.g. priority areas, zoning).

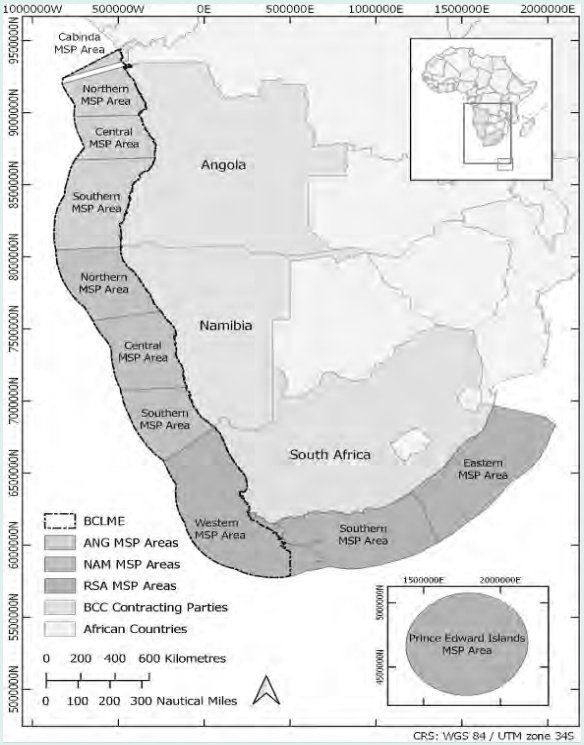


Figure 2.5
MSP areas in national waters of the BCC Contracting Parties

Source: Finke et al., 2020.

Box 2.2

Cross-border development zones in the Gulf of Guinea

Joint Development Zones (JDZ) have become one of the major trends of international law since the 1990s. As part of the State practice on provisional arrangements, joint development zones are governed under articles 74(3) and 83(3) of the 12 December 1982 United Nations Convention on the Law of the Sea. These provisions advise or oblige States to contemplate 'provisional arrangements' of 'a practical nature' when they face deadlocks in negotiations over maritime delimitation. This means that if States cannot agree on their maritime boundaries, they can or should instead consider cooperation on the disputed maritime areas, for a transitional period, while remaining under the duty of carrying on negotiations.

This is exactly what happened in the Gulf of Guinea in 2000 between Nigeria and Sao Tome and Principe. While trying to achieve the delimitation of their respective economic exclusive zone, they soon faced a deadlock. Ultimately, both States, explicitly referring to the relevant provisions of the United Nations Convention on the Law of the Sea, decided to establish a JDZ off their coasts, which covers the whole area of their overlapping claims, that is a part of their potential respective economic exclusive zone. The Treaty was signed on 21 February 2001 and entered into force in 2003.

The current general concerns over global warming and ocean governance entails a prospective analysis of the issues at stake in that treaty, as it deals with potential exploitation of both hydrocarbons and fishery resources requiring cross-border planning. The legal principles to be applied in matter of conservation and management of ocean resources make planning a necessity for both countries to broaden their views over cooperation and to consider instead a regional framework, rather than a bilateral one, in order to efficiently meet the social, economic and environmental objectives of their agreement in their transboundary context of the Gulf of Guinea.

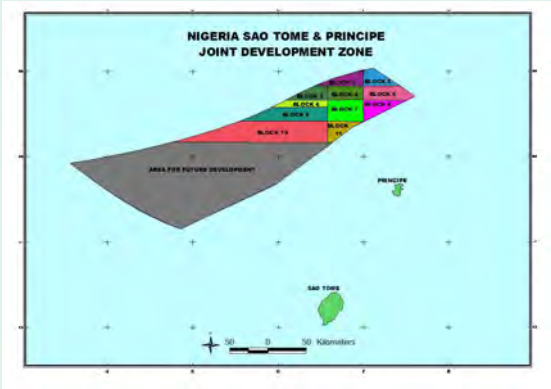


Figure 2.6
Joint Development Zone

© Nigeria Sao Tome & Principe Joint Development Authority, 2020.
Source: Adapted from Tanga Biang, J, 2010.

Box 2.3

Transboundary mechanism to deal with maritime zones and resources shared by Uruguay and Argentina

In 1973, Argentina and Uruguay signed the Treaty of Limits of Plata River and its Maritime Front establishing the Administrative Commission of the Río de la Plata (CARP) and the Joint Technical Commission of the Maritime Front (CTMFM). The CTMFM is responsible for conducting studies and adopting and coordinating plans and measures related to the conservation and rational exploitation of living resources, as well as conservation of the marine environment in a zone of common interest (**Figure 2.7**).

This treaty is considered a pioneer defining spatial zones, exploitation rights and management measures for transboundary maritime issues. The treaty focuses on navigation, pollution sources, fisheries, seabed resources and scientific research. The treaty established a common fishing zone (or zone of common interest) beyond the territorial sea of both countries. CTMFM is also responsible for promoting and sponsoring joint research campaigns in this zone and was already involved in the evaluation of submarine cables and pipelines that could affect the conservation and exploitation of living resources. Fishing and seabed resources extending to both sides of the maritime border shall be exploited proportionally and equitably to the amount present on each side.

Figure 2.7
Treaty of Limits of Plata River and its Maritime Front.

© CARP, 2021.
Sources: CARP, 2021; CTMFM, 2021.

2.2.7 Differences and similarities between MSP and other governance approaches

MSP is a public process that takes a comprehensive, spatial and temporal approach, while other protection and management measures typically focus on one place or activity at a time.

Indeed, MSP can be a process of broader societal discussion beyond the narrow spatial planning perspective. MSP processes typically analyse the current use of the seas and discuss preferred future developments. The process is thus an opportunity to define the societal objectives for the use and protection of the seas. These processes should also take into account existing international and national agreements, and ascertain which objectives have already been agreed. The MSP process should then identify which of the objectives can be achieved with the means provided by MSP, and which means are provided by other marine policies, e.g. sectoral or environmental policies.

In contexts where existing marine governance structures are not well developed, MSP can effectively be a process to enhance and introduce the objectives of many international conventions and agreements. MSP can – and probably should – include elements of marine management and spatial planning considering the limited sense of allocation of space and giving spatially specific instructions/regulation of the use of sea areas. On the other hand, where marine management is already well established, the added value of MSP to broader marine governance is focused on the allocation and integration of maritime uses.

Attempting to solve all problems and situations through MSP can be a very tedious and cumbersome process. MSP should be the overarching framework within which all other policies are articulated, thereby informing changes or revisions of the existing plans.

2.3 Using MSP to pave the way towards a sustainable blue economy

2.3.1 Maritime uses

Planners should consider the different users' needs (**Table 2.4** and **Table 2.5**) to ensure equity and equality in sector representation. This includes defining the interests of established and emerging sectors, as well as the implications for a sustainable blue economy.

A particular challenge for MSP is specifying SMART[2] objectives for the implementation of sectoral management plans. Planning scenarios can be developed once specific areas are allocated to different uses with regard to their potential requirements, using trade-off analysis. Environmental impact assessments should also be conducted to indicate any possible adverse impacts to the ecosystem. Based on these outcomes, MSP debates referring to the final plan should be focused on the most efficient solution that has the least environmental impact, while maximising the benefits of the involved sectors/uses.

Coastal and marine activities normally have terrestrial links and components that need to be considered. Linkages between terrestrial and marine planning systems are critical in this case.

Table 2.4
Types of established and emerging maritime uses

Uses	Mobile	Fixed	Others
Established	• Coastal and maritime tourism and recreation • Fisheries • Shipping	• Coastal aquaculture • Marine Protected Areas (MPAs) • Oil and gas • Pipelines and cables • Ports • Sand and gravel mining	• Coastal communities • Military defence and security • Maritime and underwater cultural heritage • Scientific research
Emerging	• Dynamic marine protected areas (DMPAs)	• Carbon sequestration through carbon capture storage • Deep sea mining • Desalination plants • Offshore aquaculture • Offshore renewable energy (wind, tidal, solar and wave energy) • Other effective area-based conservation measures (OECMs)	• Marine bioprospecting

Sources: Elaborated by MSPglobal with inputs from multiple experts and bibliographic references.

2 Specific, Measurable, Achievable, Realistic and Time-bound

Table 2.5
Sector needs and challenges related to MSP

Sector/Interest	Sector and area of interest for MSP
Shipping and ports	First generation marine plans normally take on existing shipping routes as a 'given', since the sector is internationally regulated via the International Maritime Organization (IMO), which also limits national MSP's mandate on planning. MSP is critical here to ensure that important routes are kept free from all fixed installations. MSP processes need to anticipate future shipping routes and the spatial implications of autonomous vessels. In doing so, planners must have information about future port and traffic developments. Three dimensions need to be taken into account for assessing current spatial claims and estimating future ones: i) the trajectory, i.e. the coordinates of ships' movements; ii) width of the space required (depending on traffic density and vessel size); and iii) water depth in relation to ships' draught.
Pipelines and cables	MSP authorities are normally not in charge of the detailed planning of related routes, but some countries' marine spatial plans provide for pipeline and cable corridors. This influences general data availability and access to pipelines and cables in some cases. Coordination and cooperation between national authorities is required to improve the harmonisation of regulations, licensing requirements and data sharing across countries.
Fisheries	Most plans do not allocate specific areas for fishing, as everywhere in the seas is a potential fishery area and intervention anywhere affects fishing activities. Many aspects of fishing are regulated by international agreements or policies such as the EU's Common Fisheries Policy or the regional fisheries management organisations. Fisheries is clearly a sector. However, due to its complexity, there should be provisions referring to the different subsectors (small-scale fisheries, bottom, trawls, pelagic fisheries). Areas for fishing should include which subsector (e.g. purse seine fisheries) is operating and for which target species (e.g. anchovies/sardines), and also provide a temporal reference, as the activity may occur during specific seasons. Areas important for different life stages and essential fish habitats (areas where fish spawn, live or grow) should also be taken into account. Displacement issues and compensation may be among relevant issues to be discussed with fishers in the frame of the MSP participatory processes.
Coastal and maritime tourism and recreation	The diversification of coastal and maritime tourist offers and activities can lead to conflicts among different tourist segments. Planning tourism properly may provide opportunities to improve the sustainable development of coastal communities (e.g. the case of fishing tourism). The tourism and recreation sector can benefit from diversification prompted by MSP through: • time (ensuring availability and accessibility of intermodal connections throughout the year) • space (ensuring a sustainable number of visits and sustainable effects on the ecosystem of new and existing infrastructure; regulating/disincentivising peak visits) and • new activities (providing a template for increasing synergies and managing tensions across activities between tourism and other sectors)
Oil and gas	The location of offshore infrastructure, safety and exclusion zones and maintenance/supply vessel activity should be included in the MSP, these aspects are internationally regulated and shown on nautical charts. Considering current sites and decommissioned sites for multi-uses and creating synergies with other uses can be discussed during the MSP process. When installed, the safety and exclusion zones do not usually require large areas. However, the offshore blocks are vast areas under concession agreements where temporal exploration activities occur. It is also relevant to consider oil and gas activities and pressures on ports and harbours, as well as potential impacts on other sectors and environments.
Sand and gravel mining	Marine aggregate resources are area-specific and this makes them sensitive to changes considering their long-term investments, regulatory permissions and concessions for 30-50 years. An effort should be made to ensure that the planning cycles of MSP are more aligned with the temporal scope of the sector. Actual dredging only requires limited areas, but it is important that the seabed at these locations is not negatively impacted by other sectors (known as mineral safeguarding). Planning has to consider not only the actual locations but also their surroundings.
Coastal and offshore aquaculture	MSP can stimulate the creation of clusters of farms by allocating aquaculture management zones in specific coastal or offshore areas to avoid competition with other uses. MSP can support the aquaculture sector by improving its social acceptance and through seascape and landscape assessment to inform potential areas.
Offshore renewable energy (offshore wind, tidal, wave and solar energy)	In locating an offshore wind farm, consideration must be given not only to the turbines themselves, but also the connections between turbines, the substation, and efficient connection to the grid on land. For tidal and wave stations, MSP should consider resource mapping, identify interest areas and potential synergies with other offshore renewable energy uses. In terms of interaction with other sectors, offshore renewable energy could be planned with recreational activities, oil and gas, cables, fishing or aquaculture amongst others.

Sector/Interest	Sector and area of interest for MSP
Marine biotechnology or bioprospecting	Most bioprospecting is currently performed on a small scale by numerous research groups. MSP could help coordinate resources and engagement with such groups towards finding validated areas for lead compounds that are likely to be suitable for development into medicines.
Carbon sequestration through carbon capture storage	Carbon capture and storage has moved up the political agenda and is now regarded as being potentially a major component of carbon abatement strategies, as early stage research and demonstration projects suggest that it is both technically and commercially viable to implement (Sustainable Energy Ireland et al., 2008). Ervia and Gas Networks of Ireland are assessing the role carbon capture and storage can play in helping Ireland to meet its ambitious climate action targets. MSP can serve to identify areas for carbon storage in their jurisdictional waters (Ervia, 2021).
Marine protected areas	MSP could enhance the performance of a marine protected area (MPA) network through zoning synergistic marine-use areas close to MPAs or buffer zones around vulnerable MPAs. MSP could provide a broader perspective of how MPAs are nested within a marine spatial plan, and increase ecological representativeness through protection of important areas, including those not selected as sites for MPAs, where conservation measures could be proposed and implemented.
Maritime and underwater cultural heritage	Maritime and underwater cultural heritage (MUCH) includes both tangible and intangible traces of human existence. Intangible cultural aspects are relevant for social and cultural identity, and are important when engaging with local actors. Identification of compatible and non-compatible uses with MUCH is of prime importance when planning and MSP could ensure better conservation of tangible heritage through the use of buffer zones or specific measures while encouraging synergies through tourism activities.
Scientific research	Research sites can be temporary (e.g. monitoring areas during specific seasons) or permanent (e.g. buoys and landers). The sites usually do not require large areas although it is important to consider them in MSP processes to ensure compatibility and options for multiple uses.
Military defence and security	Policy-wise, issues of national defence usually take precedence over all other maritime activities. This does not mean that compromise is impossible. However, military needs cannot be negotiated to the same degree as other maritime uses. Military areas are well defined due to security reasons and restrictions. Ministries of Defence may issue temporary exclusion areas for military activities, exercises or national emergencies. Many of these areas may not be public knowledge. Other maritime activities should be developed so as not to interfere with those related to security and national defence.

Sources: Elaborated by MSPglobal with inputs from multiple experts and bibliographic references.

2.3.2 Impacts on the local/national economy and transboundary contexts

Measuring the direct economic impact of MSP is not an easy task because each maritime sector is also influenced by other policies and other external factors, as well as by the market. However, a recent assessment analysed the production value, value added and employment of some advanced marine spatial plans, revealing that such policies are able to boost blue economic growth, especially for emerging sectors and during the first years of plan implementation (European Commission, 2020). However, the economic assessments of MSP should also pay attention to the distribution of benefits. The economic analyses that aggregate on a national economy level may ignore economic consequences at the level of coastal communities. New marine economic activities may contribute to the gross domestic product (GDP) but they may also preclude traditional coastal livelihoods.

2.4 Understanding community needs

2.4.1 Local and regional development

Although the MSP process is usually related to specific national development targets, it must also consider the subregional and local coastal contexts, taking into account community needs and potential. This should be done with the aim of gaining a systemic understanding of the integrated social and ecological components that interact at subregional/local scales. Indeed, there is growing evidence that many needs are addressed at local level and through the MSP process; solutions that meet the diverse needs and opportunities of local territories, and are in line with sustainable development concepts, can also be promoted.

Coastal communities may have some conflicts when both established and new uses compete for the same sea area and its resources. The impacts of new marine and coastal developments, such as offshore wind, aquaculture or its related infrastructures in land, can lead to a conflict of interest between coastal communities and recreational users.

Box 2.4

Poverty and gender considerations in MSP: SwAM Ocean's conceptual and analytical framework

Theoretical and analytical frameworks developed in recent years show how MSP can contribute to more gender-equal societies and to their social and economic development.

These frameworks can also help planners to ensure that the MSP process integrates gender when working in a context where access to information and resources, the labour market and participation in public and political processes are gender-segregated.

MSP can impact all the dimensions of poverty:

- Access to resources: small-scale fisheries and mineral extraction, aquaculture, participation in tourism industry, employment in marine sectors, from a gender perspective, especially closer inshore, since women tend to be constrained by family roles
- Opportunity and choice: access to markets, education and other tax-funded government services
- Power and voice: can be improved by a more inclusive process, communication and capacity building
- Human security: reduced conflict over resources. Violence and insecurity tend to have a greater impact on women, improved access to resources on domestic harmony

The impact of MSP on the above dimensions is dependent on context (see outer ring in **Figure 2.8**).

The analytic framework includes an MSP Scorecard and a social component to be used to guide and certify the social sustainability of the MSP process (**Figure 2.9**).

Figure 2.8
Poverty Toolbox

Source: Sida, 2017.

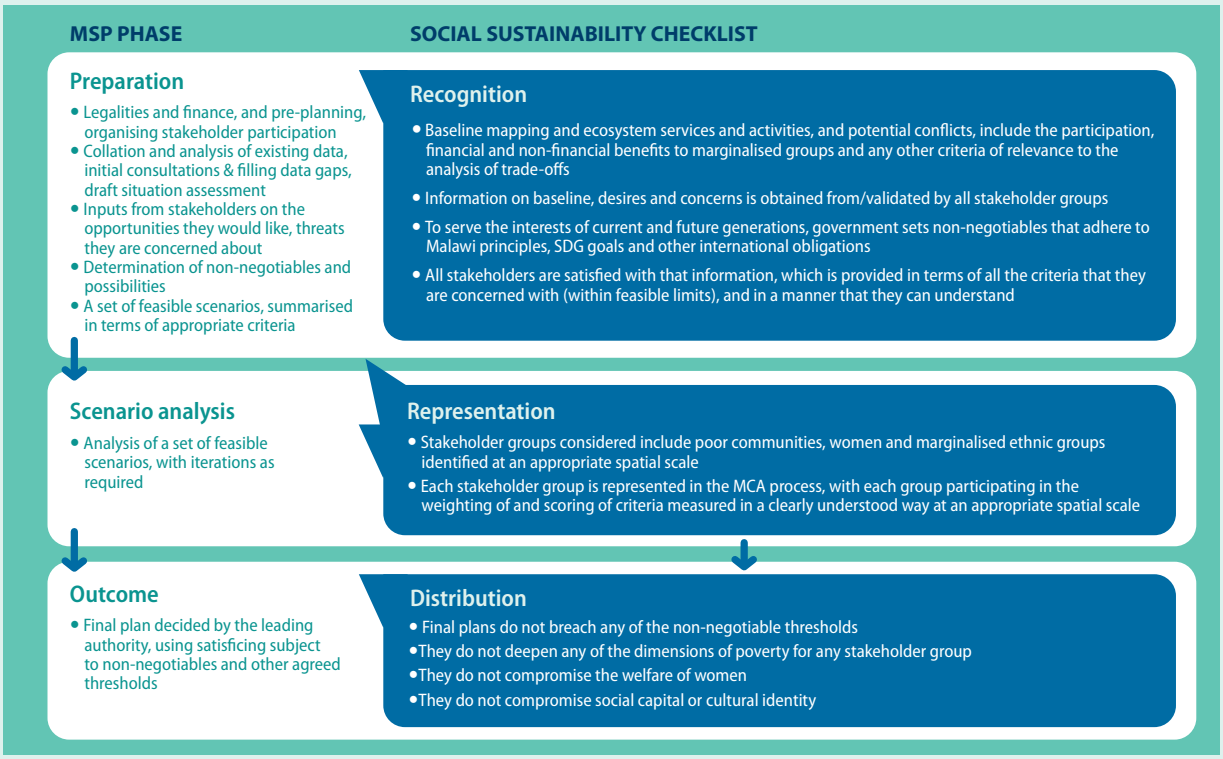


Figure 2.9
Social sustainability checklist

Source: Swedish Agency for Marine and Water Management, 2021*a*.

Table 2.6 lists the criteria for evaluating impacts on potentially marginalised groups (e.g. a deprived community, or women in a deprived community), the guiding questions and metrics required for scoring the baseline, and related metrics that will also be quantified for use in the estimation of impacts.

Table 2.6
Evaluation criteria for impacts on potentially marginalised groups

Criteria	Guiding questions for scoring	Metrics required for scoring community wellbeing	Metrics required for scoring women's wellbeing	Related metrics needed to model impacts of MSP
Power and voice	To what extent are individuals able to articulate their concerns, needs and rights in an informed way and influence decision-making affecting these concerns without discrimination	% representation in local community organisations and local government at decision-making level; % representation in national organisations and government at decision-making level	% representation of women in local community organisations and local government at decision-making level; % representation in national organisations and government at decision-making level	N/A - this metric used to confirm the potentially marginalised status of the stakeholder groups (rather than increased voice as a result of inclusion in the MSP process)
Resources	To what extent are income and/or other benefits sufficient to sustain a decent living standard, and in this regard, how do we define the decent living standard/poverty threshold in terms of $/hh/year	Average annual income, including the market value of subsistence production, welfare payments and remittances and non-monetary benefits	Average annual income, including the market value of subsistence production, welfare payments and remittances and non-monetary benefits	The contribution of marine and coastal resources or activities to this income, by resource/activity
Opportunities and choice	To what extent is access to education, health care, infrastructure, energy, markets and information sufficient to allow households to move out of poverty	Municipal expenditure per capita on services x quality of financial audit	Municipal expenditure per capita on services x quality of financial audit	The contribution of MSP activities to tax revenue, and the extent to which tax revenues reach this community
Security	To what extent are people's rights and livelihood potential being limited by unrest in the community To what extent are households able to fulfil their family roles and ensure healthy gender relationships	Qualitative scoring based on data/expert opinion Score from 1 = unrest severely disrupts livelihoods to 5 = community is peaceful	Qualitative scoring based on data/expert opinion Score from 1 = household members frequently struggle to achieve this, to 5 = secure in this regard	The sensitivity of community scores to a change in marine-related access/income The sensitivity of domestic security scores to a change in marine-related access/income

Source: Swedish Agency for Marine and Water Management, 2021*a*.

With the appropriate participatory activities, sharing of information and zoning exercises, coastal communities and residents may better understand the advantages and impacts of new uses and facilitate the selection of the planning option with higher social acceptance.

2.4.2 Social justice

The social dimension of sustainability is linked to the economic and ecological dimensions through peoples' multiple dependencies on ocean resources and space for their food and livelihoods. The SDG process revitalised the sustainability debate; sustainability returned as a common framework for discussions, and provided the vocabulary to address the perspective of justice in ocean governance (Saunders et al., 2020).

The decline in ocean health also has serious consequences for coastal communities and human well-being, which underlines the importance of incorporating social justice considerations into MSP. The perspectives of social justice and equity should be addressed during all stages of planning.

The key elements of social justice are **recognition, representation and distribution** (Bennett et al., 2019; Saunders et al., 2020):

- **Recognition**: The acknowledgement of and respect for pre-existing governance arrangements and history, as well as the distinct rights and diversity of needs, worldviews, livelihoods, lifestyles and knowledge.
- **Representation**: The level of participation and inclusiveness of decision-making; timing and quality of inclusion into decision-making.
- **Distribution**: Fairness in the distribution of benefits, risk and harms of decisions, as well as access to resources, with a particular emphasis on vulnerable groups.

Social inclusion needs to be seen as an inherent part of the MSP sustainability agenda for contributing to the implementation

of the SDGs in marine and coastal areas (Gilek et al., 2021); adaptive MSP, able to integrate the dynamic nature of social concerns promoting social cohesion and justice, may also aspire to transformative change towards societal resilience at the community level, which is crucial to advance sustainable development concepts and goals for 2030 (IPBES, 2019).

2.4.3 Strategies for communities and community capacity

As part of the starting discourse for the MSP process, it is important to host community-level discussions to describe MSP and increase understanding following the pre-planning phase. It will be valuable to discuss how communities can benefit from a marine spatial plan and how they can be involved in the planning process.

Although the main targets of MSP are set at national scales, plans should be developed at subnational/local scales capturing the characteristics of the socio-ecological systems of the mosaic of coastal communities and ecosystems within each of the subnational entities (**Box 2.5**).

It is also important to address and explain the issue of scale, as marine spatial plans can extend far beyond coastal waters and cover large sea areas.

From a community perspective (for topics that are local), only parts of the final plan may be relevant. The planning process needs to be organised on multiple scales, so that local concerns can be meaningfully discussed and taken into account, at the same time acknowledging the larger scale issues and their interplay with more local ones. These strategies can be edited or more can be added, depending on what is important for local community engagement discussion in all stages of the planning process, including the review:

- Invite communities to learn about MSP and share their perspectives on why the ocean is important and what they care about now and in the future in terms of managing and protecting marine resources
- Present communities with planning scenarios to inspire interactive and tangible discussions focused on marine planning issues
- Engage community in a participatory mapping exercise
- Invite some of the community members and leaders to take part in panel and/or round-table discussions
- Present planning documents in abridged versions in 'everyday' language, and include graphics
- Engage community members through social media and community groups
- Ensure that information about the planning process is disseminated in local newspapers and local radio stations

The well-being and sustainable livelihoods of coastal communities depend on access and related benefits, particularly under changing environmental conditions and levels of resource availability (Bennett et al., 2018). Social learning and socio-ecological innovation are essential for incorporating multiple changes and dynamics in MSP and for moving towards the sustainable use of marine resources (Gissi et al., 2019). Indeed, being part of the change and benefits that MSP can bring requires knowledge and skills from the community, including an overview of the policy. This implies community capacity building and public awareness raising during the

TIP

Build trust, co-responsibility, ownership and ensure compliance with provisions of the plan, as the communities will be part of the process.

Box 2.5

A blue economy strategy to lever MSP in Central America

The Organization of the Fisheries and Aquaculture Sector of the Central American Isthmus (OSPESCA) – with the support of the European Union, as well as the collaboration of regional and national authorities, representatives of the fishing, aquaculture and tourism sectors, academia and civil society – developed the 'Regional Strategy for Blue Growth' in the Central American Integration System (SICA) (OSPESCA, 2020). The SICA Council of Ministers for Fisheries and Aquaculture activities approved this strategy and committed to the sustainable development of the maritime sectors according to objectives to become green, competitive, innovative and inclusive.

The strategy was developed based on four pillars:

(1) Knowledge-based smart blue region

(2) Growth supported by integrated governance mechanisms

(3) Investment in the development of a new, competitive and innovative blue economy

(4) Growth promoted from equal opportunities

The strategy identifies the need to foster the development and implementation of national marine spatial plans, while regional guidelines will be provided to support the countries. **MSP is seen as a necessary instrument to facilitate the coexistence of different socio-economic uses.** This initiative expects to achieve the development of six national marine spatial plans by 2025. Moreover, these four pillars also highlight the need for sectoral adaptation and mitigation plans in order to strengthen the resilience of the maritime sectors.

Source: OSPESCA, 2020.

Box 2.6

Maritime clusters and partnerships in the context of MSP in Tunisia

The Tunisian Strategy for Integrated Coastal Zone Management (Protocol on Integrated Coastal Zone Management in the Mediterranean) was adopted in 2008 and entered into force in 2011. The development of a national management plan is ongoing and supported by various partnerships and initiatives related to MSP.

One of these initiatives is the Tunisian Maritime Cluster, which was created on 25 October 2019 by the President of Tunisia. It seeks to bring together all the players in the maritime ecosystem, including industry, services and maritime activities (public and private sectors), e.g. aquaculture, renewable energy, scientific research, marine biotechnologies, fisheries, maritime safety, oil and gas, among others.

The initiative has led to other regional clusters such as the Maghrebin Maritime Cluster. To promote synergies between the cluster and the MSP process, several members of the cluster are involved in the development and implementation of the MSP and the ICZM strategy. The maritime clusters seek to advance the following objectives that are in line with the objectives of MSP[1]:

- The sharing of experience and good practices to support the development of maritime potential through the development of a sustainable blue economy
- To set up projects in a wide variety of fields: planning and sustainable use of the marine environment, biodiversity conservation, coastal protection, and technological approaches for a circular economy in fisheries and aquaculture
- To develop synergies between the various sectors of activity linked to the sea and to promote them in Tunisia and abroad
- To support Tunisian innovation, research and training for the protection of the environment and the sustainable exploitation of sea resources
- To support digital, technological, or environmental innovations (concerning all maritime sectors and activities
- To raise public awareness about the opportunities offered by the sea and to encourage the involvement of younger people

Source: Tunisian Maritime Cluster, 2020.

1 International Cooperation in the context of Marine Spatial Planning and Blue Economy in the Western Mediterranean. https://www.mspglobal2030.org/events/online-seminar-on-intl-coop-in-the-context-of-msp-and-blue-economy-in-the-westmed-en/ https://www.facebook.com/Cluster-Maritime-Tunisien-103671181076257/

pre-planning and planning phase, as well as the implementation phase. As a result, people will be able to pursue proposals and opportunities (**Box 2.6**).

2.5 The transboundary dimension of MSP

2.5.1 Implementing the UN 2030 Agenda

The United Nations 2030 Agenda for Sustainable Development and its 17 interconnected Sustainable Development Goals (SDGs), adopted in 2015, is a global framework for international, national and local initiatives that can be led by any group of stakeholders – but especially through partnerships – towards a more sustainable and just world. Moreover, it is a long-term roadmap that sets the scene for public policies.

Therefore, MSP should embrace all SDGs and contribute to achieving them. As the 2030 Agenda can only be achieved by 'transforming global aspirations to local realities' MSP can become a vehicle contributing to this aim and involving different spatial scales of intervention. There is, indeed, room for such a process to tackle the challenges of the present decade, as shown in **Figure 2.10**. It is important to highlight that the achievement of a specific SDG should not jeopardise, but foster, the others whenever possible.

2.5.2 Planning for climate change

The ocean absorbs both heat and CO_2, therefore climate change and increased emissions are making the ocean warmer and more acidic. Among the many and varied consequences of this scenario on biodiversity, shifts in geographical and seasonal distribution of some mobile marine species are expected, while immobile ones will be under greater pressure. Changes in oceanic circulation and chemistry also affect the delivery of marine ecosystem services, while sea level rise and more frequent extreme weather conditions are making coastal communities, infrastructure and maritime activities more vulnerable (IPCC, 2019).

According to the UN Framework Convention on Climate Change (UNFCCC), 'mitigation' is related to efforts to reduce greenhouse gas emissions and increase carbon sequestration; 'adaptation' refers to adjustments in ecological, social or economic systems in response to actual or expected climate change impacts. The *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* (2019) clearly states that 'intensifying cooperation and coordination among governing authorities across scales, jurisdictions, sectors, policy domains and planning horizons can enable effective responses to [climate change induced] changes in the ocean'.

Figure 2.10
Relationship between MSP and the SDGs

Source: IOC-UNESCO, 2020.

Table 2.7
Mainstreaming climate change impacts in MSP: Challenges and opportunities

Challenges	Enablers and opportunities
• **Variable impacts on sectors, in different geographies and at different scales:** The effects of a changing climate are not expected to affect all places uniformly, and so differences in socio-ecological vulnerabilities should be spatialised and considered in planning scenarios • **Limited knowledge of processes and impacts:** There is still limited knowledge on the complexity of the processes underlying the impacts of climate change • **Variable national responses:** There is a tremendous difference in technical, institutional and financial capacities for climate change adaptation between developed and developing countries	• **Climate-smart MSP:** Planning initiatives that use data and knowledge about climate change impacts on marine ecosystems and human uses at appropriate spatial scales to develop resilience scenarios • **Marine Protected Areas and nature-based solutions:** These can be used to promote adaptation benefits such as towards the conservation of ecosystems that provide services such as coastal protection, climate adaptive areas, climate refugia and carbon sequestration • **Stakeholder engagement:** Stakeholders may provide valuable knowledge about how a system functions overall and how it has changed over time • **Ocean and climate literacy:** Raise awareness on climate change issues and potential nature-based solutions

Source: UNESCO-IOC, 2021*d*.

Not only environmental components, but also maritime activities will be affected by changes in the ocean (decrease, increase or relocation). Here, it is important to highlight that these consequences will vary according to geographical characteristics. Despite uncertainties and resource challenges, MSP needs to incorporate climate change in its analysis and proposals, and how it might affect the different steps of planning, aiming to create a dynamic plan that will adequately balance and sustain the planning objectives supporting oceans' resilience to climate change impacts (see **Table 2.8**). Up until now, however, most planning initiatives have still been neglecting the issue (Frazão Santos et al., 2020). Hence, it is important to ensure that MSP processes have the mandate to address climate change, as they may function as a 'switchboard' for mitigation, adaptation and sustainable development objectives, thereby enhancing options in an integrated manner (Biesbrock et al., 2009). Indeed, identification of fit-for-purpose, nature-based solutions (NbS) that are spatially explicit and operationally mature, using 'climate-smart MSP' approaches, may significantly promote sustainability and resilience in the different planning areas and effectively contribute to the targets and goals of the 2030 Agenda (V. C. Vassilopoulou, personal communication, 2021).

Under the UNFCCC, the international Paris Agreement was adopted in 2015 and entered into force the following year. It aims to limit the global temperature increase to 1.5–2° C above pre-industrial levels; foster climate change adaptation, climate resilience and low greenhouse gas emissions development; and foster finance flows to achieve low greenhouse gas emissions and climate-resilient development.

Efforts to reduce the impacts of climate change are reported every five years as nationally determined contributions (NDCs) to the Paris Agreement.

Examples of MSP objectives related to climate change responses may include:

- promotion of offshore renewable energy
- promotion of blue infrastructure and nature-based solutions for carbon sequestration or coastal vulnerability reduction
- conservation of potential areas for climate refugia

Moreover, a climate-smart MSP could also propose the emerging concept of dynamic marine protected areas (DMPAs), which means MPAs that are planned to shift across latitudinal gradients as species distribution are expected to shift according to climate change models.

To bring climate change into an ecosystem-based management of the sea, the concept of climate refugia was developed as a part of the planning evidence in the maritime spatial planning process in Sweden (**Figure 2.11**) (Wåhlström et al., 2020). A climate refugium is an area where climate change will not severely affect a species or its habitat. The concept was then scaled up to include the whole Baltic Sea region (Törnqvist et al., 2019). Six species have been investigated (herring, cod, blue mussel, ringed seal, eelgrass and bladderwrack). In the Swedish planning process, sea basins are divided into 114 areas. Out of these, 16 areas have been selected as needing special protection in order for important plants and animals to survive when the climate changes. These areas have been taken into consideration when assigning the most suitable use to a given space.

Table 2.8
Pathways to support the inclusion of climate change in MSP

Approaches	Actions
Integrating climate change impacts in MSP policies	Recognising climate change as a threat or challenge
	Including specific objectives related to climate change responses
	Developing climate-related modelling and mapping tools in assessments about future conditions of ecosystems and biodiversity, as well as maritime activities
	Developing climate-related vulnerability and risk analyses
	Including climate change in spatial-use scenarios and visioning processes
Promoting adaptation to climate-related change	Adopting dynamic ocean management, i.e. defining flexible designated areas with boundaries that change in space and time in response to climate-related change
	Developing anticipatory zoning, e.g. defining a priori designated or exclusion areas in anticipation of potential climate change impacts
	Adopting an adaptive planning approach that includes revision opportunities to incorporate new climate-related knowledge

Source: Adapted from Frazão Santos et al., 2020; Cashion et al., 2020.

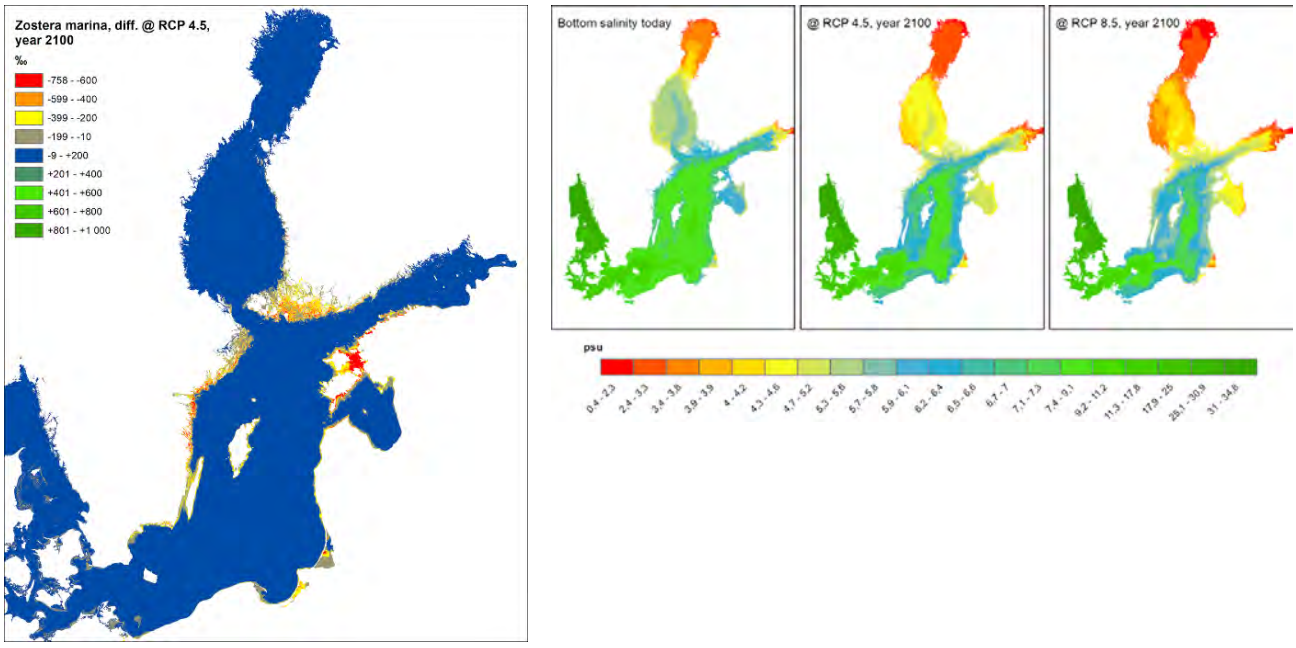


Figure 2.11
Climate refugia application in MSP

Sources: Törnqvist et al., 2019; Wåhlström et al., 2020.

Box 2.7

Regional seas conventions

The United Nations, through its Environment Programme, provides what is considered the most important multilateral cooperation mechanism (Multilateral Environmental Agreements) for the conservation of the marine and coastal environment: the Regional Seas Programme (1974), a milestone of so-called 'environmental diplomacy' (Mead, 2021).

The multilateral character of this action-oriented programme is well reflected in the level of participation: more than one third is made up of agreements that bring together more than 15 signatory countries per regional basin (**Figure 2.12**).

There are currently 18 Regional Seas Programmes, 14 of which have adopted a legally binding instrument: the Regional Seas Conventions. Of these 14 conventions, 11 are linked to the UNEP-sponsored programmes, the remaining 3 being independent (Baltic Sea, North East Atlantic and Antarctic).

The conventions set the rules for implementing the corresponding Action Plans, with most of the conventions having additional protocols to address specific issues such as protected areas, land-based pollution, integrated coastal zone management or offshore industries.

The Regional Seas Programme has an institutional and organisational dimension (Regional Coordinating Units, Regional Activity Centres, Conference of Parties, Intergovernmental Meetings, etc.) that reinforces the United Nations' strategic presence at regional level, global consensus and policy coherence in relation to environmental issues of sustainable development.

Sources: Mead et al., 2021; Ban et al., 2014.

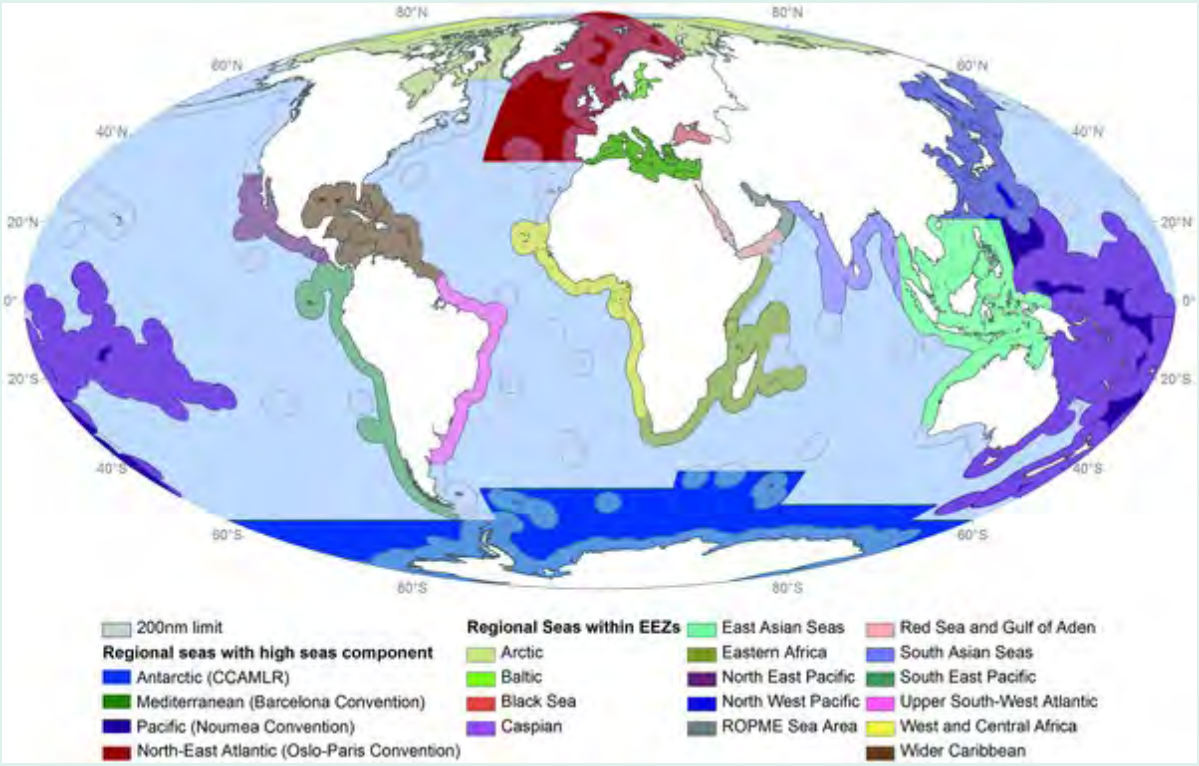


Figure 2.12
Geographical distribution of regional sea conventions

Box 2.8

The Convention on the Conservation of Antarctic Marine Living Resources

The Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention) forms an integral part of the Antarctic Treaty System.

The relationship between the CAMLR Convention, the Antarctic Treaty and the Treaty's Protocol on Environmental Protection, as well as the conservation principles embedded in the Convention itself, are among the key features that distinguish CCAMLR from regional fisheries management organisations.

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) was established by international convention in 1982 with the objective of conserving Antarctic marine life (**Figure 2.13**). This was in response to increasing commercial interest in Antarctic krill resources, a keystone component of the Antarctic ecosystem and a history of over-exploitation of several other marine resources in the Southern Ocean.

Responsible for the conservation of Antarctic marine ecosystems, CCAMLR practices an ecosystem-based management approach. This does not exclude harvesting, as long as this is carried out in a sustainable manner and takes account of the effects of fishing on other components of the ecosystem.

CCAMLR is an international commission with 26 members, and a further 10 countries have acceded to the Convention. Based on the best available scientific information, the Commission agrees on a set of conservation measures that determine the use of marine living resources in the Antarctic.

The key institutional components of CCAMLR are:

- the CAMLR Convention which entered into force on 7 April 1982
- a decision-making body, the Commission
- a scientific committee which advises the Commission using the best available science
- Conservation measures and resolutions
- CCAMLR's membership and provisions for international cooperation and collaboration
- a secretariat based in Hobart, Tasmania, that supports the work of the Commission.

CCAMLR's programmes of research, monitoring and the application of conservation measures in the Convention Area make a valuable contribution to Antarctic conservation.

Sources: CCAMLR, 2021; European Commission, 2021*b*.

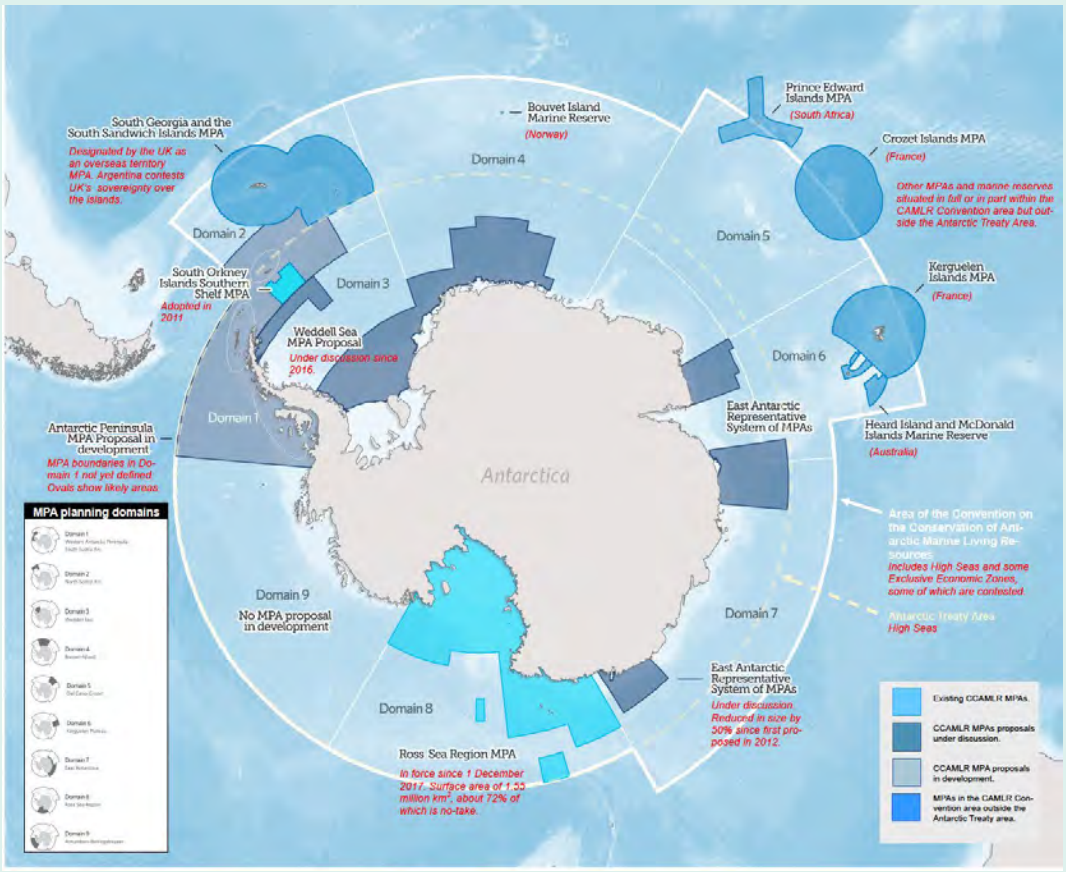


Figure 2.13
CCAMLR MPA planning domain

Source: CCAMLR, 2021.

2.5.3 Multilateralism: Technical solutions offered by international maritime boundary treaties and their application to maritime spatial plans

During the celebration of the 75th anniversary of the United Nations, heads of state and government stated that strengthening international cooperation is in the interest of both nations and peoples.

The 2030 Agenda for Sustainable Development represents the roadmap to reinvigorate multilateralism, and the agenda's implementation has become a necessity for survival.

In line with the principles of MSP, this updated multilateralism is determined to advance leaving no one behind, acting together to protect our planet and, more specifically, our ocean.

Multilateralism, in the same way as transboundary agreements, promotes coherence, peace and prevents conflict through a long list of mediation actions and preventive diplomacy, with international law and justice as an indispensable foundation for a more prosperous and just world.

Existing global and regional mechanisms can serve to accomplish this mission by boosting partnerships and cooperation across borders. Global and regional actions will help us to better understand our common and specific challenges to shape solutions through inclusive governance, the creation of opportunities and prosperity for all (**Boxes 2.7** and **2.8**).

2.5.4 Vulnerable and disadvantaged States

Most of the issues discussed so far have a direct effect on, or are closely related to, a significant part of the international community, without the participation of which it would be difficult to make progress in the search for solutions to conflicts of a global nature. There is certainly full consensus that climate change is one of the most representative in terms of its impact on different countries according to their level of economic and human development. The concept of the blue economy is especially linked in its origin to the developing world, and initiatives such as the SDGs are primarily aimed at this part of the international community.

Since the United Nations Convention on the Law of the Sea (UNCLOS), the geographical and economic characteristics of countries have been taken into account in various international treaties in relation to the development of their provisions. These range from the mention of geographically disadvantaged States in UNCLOS (Art. 70) to the revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (Art. 7), where six groups of countries in conditions of vulnerability are identified as developing States. These are: least developed countries (LDCs), landlocked developing countries (LLDCs), geographically disadvantaged States, Small Island Developing States (SIDS) (**Figure 2.14**), coastal African States and developing middle-income countries.

In reality, these categories of countries make up the majority of the community of nations, with only two categories – LDCs and developing middle-income countries – accounting for 77% of UN Member States.

The challenges of implementing MSP in SIDS imply: i) difficulty and severe limitations in the development and management of planning instruments, due to their high cost – something which particularly affects the least developed and developing middle-income countries; and ii) dependence on MSP for the promotion of development in the case of countries whose territorial base is predominantly marine – something that is aggravated if their economic level is also low.

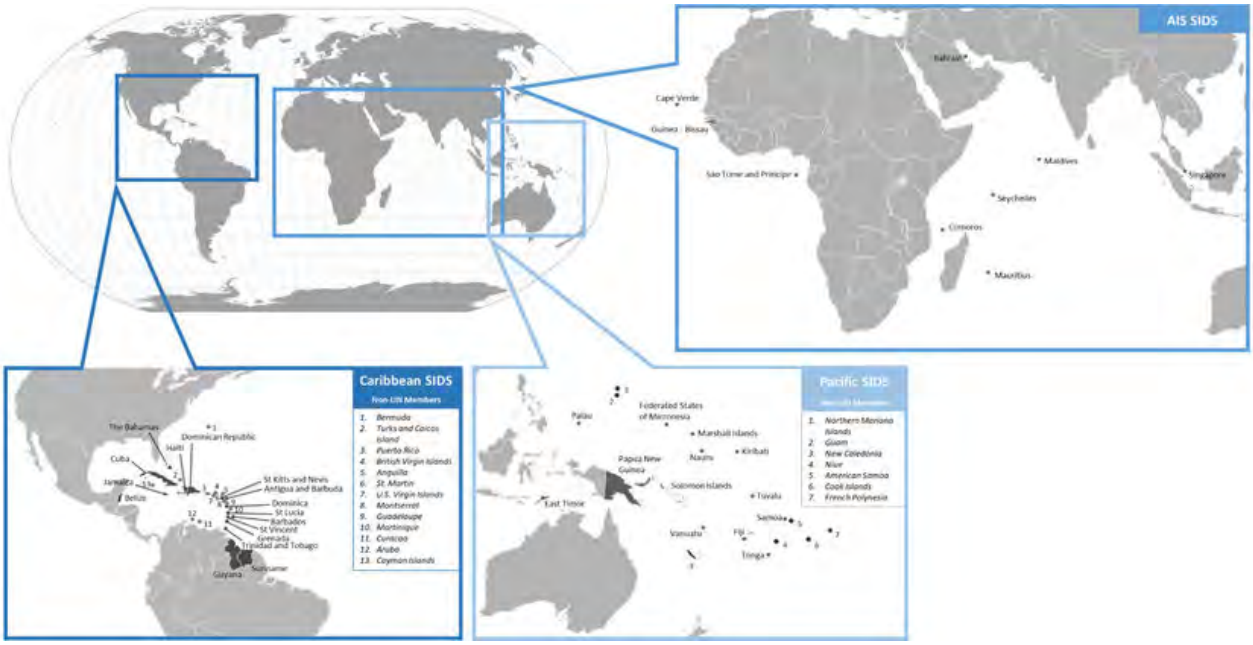


Figure 2.14
Small Island Developing States

Source: R. Zitoun et al., 2020.

3 How to set the scene

THIS CHAPTER DESCRIBES

- **The creation of the MSP working group**
- **The identification of existing legal and institutional frameworks to develop MSP**
- **The identification of stakeholders and their planning needs**
- **The budget and funding available for the MSP process**

3.1 Creating an MSP working group

In order to start organising a government-led MSP process, the first task is to determine whether there are existing marine and coastal planning capabilities, i.e. which institutions or agencies have the legal authority to manage marine resources and enforce activities in the maritime area. In most countries, multiple institutions have environmental, maritime and/or planning authority, and their spatial jurisdiction may overlap, be unconnected or be non-existent.

In the initial stages of launching an MSP process, it is advisable to create and set up a multi-institutional or multi-agency working group from the competent authorities as a steering committee. This working group may include key stakeholders, experts – including from academia, and/or members of civil society – with experience in marine planning. It may also include members with experience in land use planning if this is the first time for MSP.

The purpose of the working group is to begin organising the process and bring perspectives and expertise from multiple sectors to coordinate the launch of MSP. The working group could also ensure that representatives from sectoral authorities and stakeholders are kept aware of the MSP process and what to expect in terms of timelines and the workstreams.

The working group would develop a Terms of Reference document, or something similar, outlining its roles and responsibilities, schedule of meetings, timeline, etc. One of the tasks for this group can be an assessment of the legal and institutional framework, among others as listed hereinafter.

It is important not to assume that high-level officials, academics and other stakeholders or participants at this stage and beyond know what MSP is about. Knowledge sharing and learning takes place throughout the MSP.

3.2 Identifying existing national legal and institutional frameworks

At this stage, the vision, goals and objectives of the MSP have not been identified (see **Chapter 4**). However, it is necessary to have a good understanding of the existing legal and institutional frameworks on which to anchor the MSP. This task will also identify where there are weaknesses or gaps in these frameworks.

A useful starting point is to first map maritime and sector laws and regulations, then to map plans, priorities, programmes and strategies .

The identification of any established national policies related to MSP and a sustainable blue economy could start by reviewing the following sources:

- National ocean policy/strategy
- Blue/ocean/maritime strategy
- Sectoral policies
- Sectoral management plans
- Integrated coastal zone management (ICZM)
- Renewable energy targets
- Regional and/or local development programmes (especially for coastal regions)
- Climate change adaptation strategies (e.g. if not included in ICZM)
- Environmental plans and policies

Maritime policies often correspond to the competences of national governments. The vision of 'maritime affairs' (uses, activities and utilisation of the maritime space in the strategic sense) is that of a 'matter of state'. The 'oceanic' vision of states has evolved over the past decade, giving rise to formal pronouncements at different political-institutional and legal levels.

Integrating different policies and administration levels is an important aspect of developing and establishing MSP (**Box 3.1**).

Box 3.1

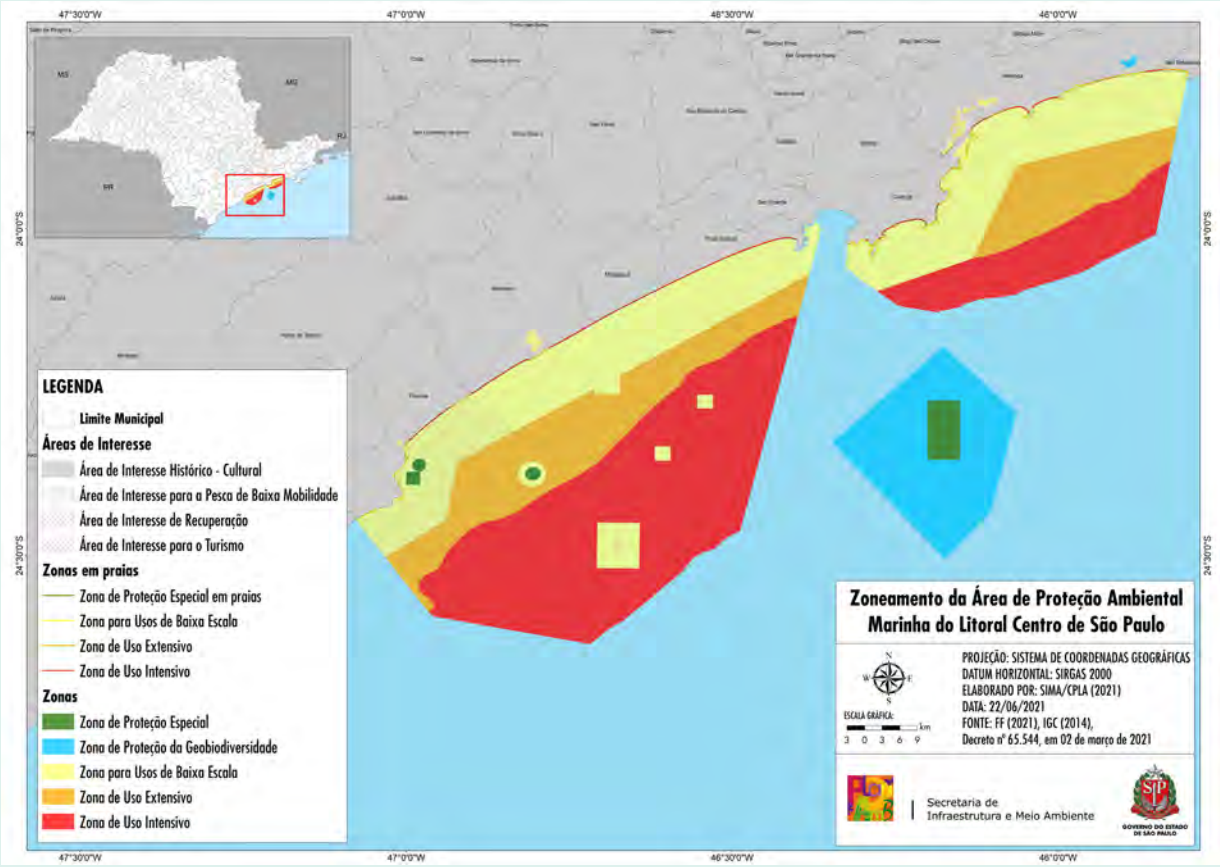
Integrating coastal management, MPAs and MSP in São Paulo, Brazil

Brazil approved its **National Coastal Management Plan** in 1988. Its regulations defined the planning boundaries within the 12 NM from the coast and, among other instruments, included **Coastal Ecological Economic Zoning (ZEEC)** – a territorial tool which enables management, licensing and monitoring to be developed in a participatory manner by each coastal State. The ZEEC aims to establish guidelines about permitted, prohibited and potential uses. The Ministry of Environment is responsible for monitoring and evaluating the implementation of the national plan, as well as for observing the coherence of the State Coastal Management Plans.

The **State Coastal Management Plan of São Paulo** was established in 1998 (before the national regulation) and defined the 23.6 m isobath as its planning limits. São Paulo developed four ZEECs, three of which have a maritime front: North Coast, Baixada Santista and Cananéia-Iguape Estuarine Complex (SMA, 2013).

Later, three MPAs for both conservation and sustainable use of natural resources were created in areas including these sections: North, Central and South Coast. The **Management Plan of the MPA of the Central Coast of São Paulo**, for example, defined in more detail the coastal management zones previously established for the ZEEC Baixada Santista, as well as additional zones further offshore (meaning that the ZEEC and the MPA management plan are complementary). This plan was developed through a participatory process that engaged representatives of the local government, sectoral stakeholders, researchers and civil society. The categories of MPA zones are the following: I) no-take zone; II) geobiodiversity protection zone; III) small-scale use zone; IV) extensive use zone; and V) intensive use zone (ALESP, 2021).

Similar to coastal management and MPA processes in other countries, the Brazilian zoning classifies the different zones according to the intensity of a group of uses allowed, i.e. not a zone for each sectoral use. And this is the added value that complementary MSP processes based on a clear long-term vision, specific objectives and spatial allocation of uses could bring to these countries.



Zoning legend:
green = no-take zone; blue = geobiodiversity protection zone; yellow = small-scale use zone; orange = extensive use zone; red = intensive use zone.

Figure 3.1
Management Plan of the MPA of the Central Coast of São Paulo

3.3 Identifying existing international laws, regulations and agreements applicable and/or adopted by the country or countries

At the global level, independently of countries' decisions to sign/ratify UNCLOS, MSP has been adopted as a model for an ecosystem-based approach in the planning and management of the marine environment, as well as for the public process towards achieving target 2 of Sustainable Development Goal 14 (SDG 14) of the United Nations 2030 Agenda – 'Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve a healthy and productive ocean'.

Alongside the blue economy, MSP can thus contribute to increased economic and social benefits, and examine possible trade-offs between economic, social and environmental objectives in order to find a balance between them. At the same time, MSP can drive the achievement of many other international agreements, such as the CBD and the Paris Agreement on climate change.

Relevant international legal instruments

- United Nations Convention on the Law of the Sea (UNCLOS)
  - Basis for the declaration of the various maritime jurisdictions
  - Stipulates international principles of controlling shipping and right of innocent passage
  - Indicates extent of responsibilities for protection of biological marine resources
  - Authority to manage and prohibit extraction activities within national jurisdiction
  - Addresses piracy and prosecution of illegal activities within national jurisdiction and international territorial sea cooperation
- United Nations 2030 Agenda for Sustainable Development
- United Nations Framework Convention on Climate Change (UNFCCC) and related agreements and protocols
- United Nations Fish Stocks Agreement
- FAO Compliance Agreement
- FAO International Plan of Action to Prevent, Deter, and Eliminate IUU Fishing
- International Convention for the Safety of Life At Sea (SOLAS)
- Convention on Biological Diversity (CBD)
- International Convention for the Prevention of Pollution from Ships (MARPOL)
- Port State Measures Agreements (PSMA)
- Convention on Wetlands (Ramsar)

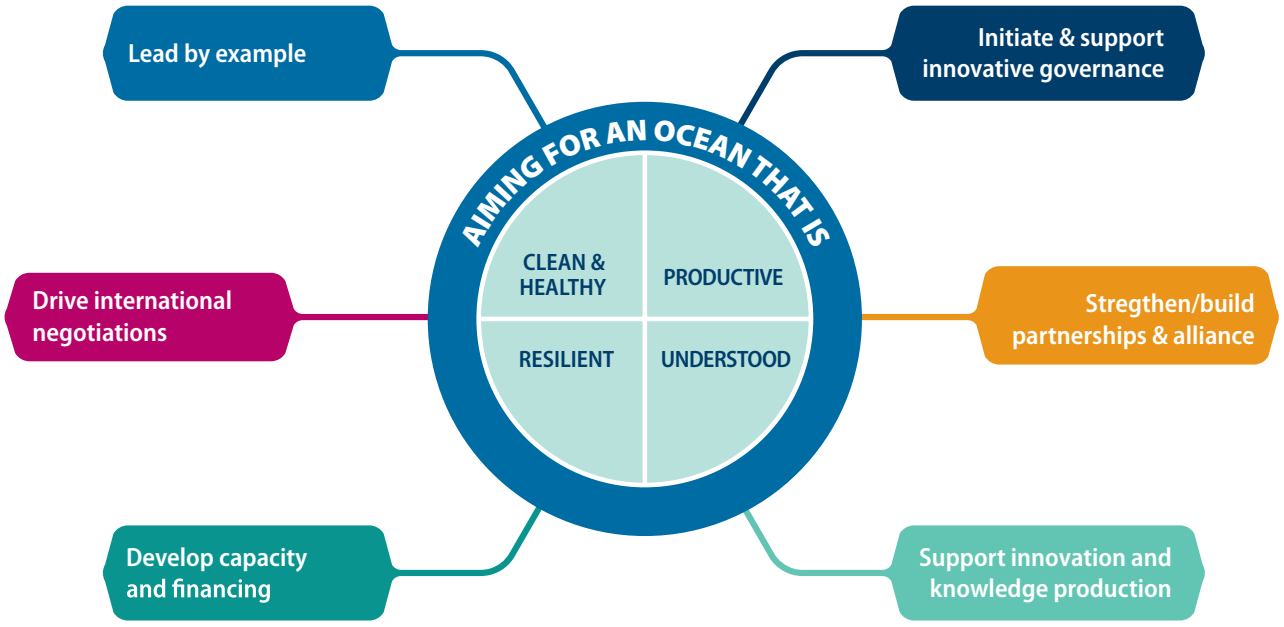


Figure 3.2
Setting the course for Sustainable Blue Planet

Source: International Ocean Governance Forum, 2021.

3.3.1 What are some of the international conventions and agreements related to MSP?

The protection of coastal and marine areas involves multinational jurisdiction and raises the issue of international cooperation by both governmental and non-governmental organisations. International cooperation is established through several global and regional conventions, agreements and programmes.

One particular benefit of introducing the MSP framework is that it adds a comprehensive spatial perspective on marine governance. MSP is a process that is incorporated into the varied and complex structure of maritime governance and management, without any hierarchical or organised construction of an express or preconceived interrelationship among the components of that structure. This implies that such components – principles, codes, guidelines, international treaties, agreements within international bodies, national rules, etc. (**Figure 3.2**) – coexist without excluding or overriding each other, and are activated and implemented in accordance with the legal/political effects inherent in their legal/political nature. It follows that the numerous governance and management actions already in place can continue to be generated within the framework of the instruments available without necessarily having to be integrated into MSP (e.g. the creation of new marine protected areas). As a result, the range of governance and management tools is enriched, and governance becomes more complex.

3.3.2 How can MSP foster international goals and considerations beyond national borders?

As the uses in the coastal and marine space become more and more complex, and new or emerging sectors look for areas for sustainable economic development, MSP can foster international goals for regional management and global coordination. MSP is a process, and as such can provide a 'good practice' approach to solving multiple objectives beyond national borders. Frameworks that have been tested and applied within national jurisdictions can be adapted for other applications.

International goals, or cooperative goals, could be developed for MSP to address goals for those complex issues that are not defined or restricted by the borders of individual countries, such as climate change (Santos et al., 2019) and IUU fishing. MSP could also be used to foster international goals for a sustainable ocean economy, blue economy and other ambitions that involve multiple countries or entire ocean basins.

International goals and objectives would then need to have a monitoring and evaluation plan and indicators to track progress.

3.3.3 What are the regional mechanisms related to MSP and a sustainable blue economy?

Regional mechanisms and frameworks can support and enhance MSP efforts. These mechanisms can be legal agreements between states or cooperative agreements and conventions.

- Regional-level cooperation (legal)
  - European Union
  - African Union
  - Federated States of Micronesia
- Regional-level cooperation (conventions, agreements, policy)
  - African Maritime Strategy
  - EU Integrated Maritime Policy
  - Eastern Caribbean Regional Ocean Policy
  - Regional Sea Conventions
- Sectoral-level cooperation
  - Regional Fisheries Management Organisations (RFMO)
  - Renewable energy targets and climate strategy – Electricity market and grid strategies (Ten-Year Network Development Plan (TYNDP))
  - European Common Fisheries Policy
  - Belt and Road Initiative (transport and infrastructure network)
  - Transboundary MSP (transboundary marine spatial plan vs transboundary MSP strategy) to ensure coherent national plans
  - MSP consultations, joint projects and events between neighbours as a means to jointly address regional strategies
  - Check during follow-up of national MSP implementation whether the regional objectives have been met. The most relevant international objectives could be used as a basis for formulating indicator
  - Share information and reflect back at the regional level

TIP
How to integrate and optimise international, regional and national processes?

- **During the stocktaking phase, conduct a full analysis of agreements at the different levels**
- **Share information between levels (reporting; events to bring together actors from different levels to share information and experiences)**

Box 3.2

One community, growing together

The Caribbean region is ranked among one of the most biodiverse regions of the world. In the OECS, increasing awareness is being placed on marine areas which hold an abundance of natural resources including rich biodiversity, living resources (both marine and terrestrial) and non-living resources in the form of mineral and natural products. In comparison to the land area, the OECS has many times more marine area than prescribed under the United Nations Framework Convention on Law of the Sea.

While the OECS has exercised jurisdiction by legislation over the water column and the accompanying living and non-living resources, the benefits to be derived are not fully maximised but nonetheless many resources are utilised. However, many decades of use and exploitation of the marine environment with inadequate resource management programmes has left growing evidence of degradation of its critical and vulnerable ecosystems. Some of the drivers of this degradation are those activities associated with poorly-planned coastal and urban development, unsustainable tourism, land-based and marine sources of pollution, over-exploitation of living resources, removal of keystone species and the proliferation of invasive species. Notwithstanding, the economic potential of some marine resources remains unassessed or underutilised. These latter resources include, but are not limited to, non-living resources such as petroleum products, marine renewable energy sources and mineable resources.

Source: Organisation of Eastern Caribbean States (OECS), 2021.

Four broad programmatic areas exist under the Oceans Governance and Fisheries Unit:

1. **Supporting robust institutional frameworks:** Enabling the OECS Commission to create an institutional framework for regional cooperation in transboundary oceans management.
2. **Strengthening capacity:** Strengthening national and regional capacities for the development and implementation of ocean law and policy within the framework sub-regional cooperation.
3. **Providing technical assistance:** Facilitating the provision of technical services in the area of sustainable ocean resource and marine environmental management.
4. **Promoting awareness:** The Ocean Governance and Fisheries Programme is guided by the Eastern Caribbean Regional Ocean Policy (ECROP) and Strategic Action Plan.

Overall, the Oceans Governance and Fisheries Programme aims to:

- Secure access to resources
- Maintain and improve ecosystem integrity
- Promote social and economic development
- Adopt multiple-use ocean planning and integrated management
- Promote public awareness, participation and accountability
- Support research and capacity building
- Build resilience and manage for uncertainty
- Maintain maritime safety and security

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3.4 Identifying key stakeholders

A participatory approach requires key stakeholders in both the public and private sectors to be identified and mapped, in order to ensure inclusive, transparent and equitable engagement and communication. In some cases, the identification process will also consider stakeholders who may be out of the country or reside in other jurisdictions.

Identifying key stakeholders should consider privacy laws and other legal or policy considerations nationally and internationally. Guidebooks for best practice regarding engagement should be consulted at this stage, including how to ensure confidentiality when required – for example, when culturally sensitive information is provided by indigenous peoples or proprietary information in a new research area.

In order to build the actual capacities in a given country, it is important to involve institutions and sectoral agencies, who may later on be involved as expert advisors and are also equally respected by governments as well as stakeholders. Depending on the specific context, these may encompass scientific organisations, e.g. universities or research institutes; consulting companies or NGOs specialised in process, project, stakeholder and change management processes; or experts in geographic information systems (GIS) and applications.

One way to organise and manage a list of MSP stakeholders is to create a 'master list' using spreadsheet or database applications. The list could categorise stakeholders by sector, affiliation (e.g. governmental, private sector, academia, NGO, etc.), job title and other variables such as gender and demography.

Key stakeholders change over time and the list of members on committees will change. In order to keep the stakeholder list up to date, regular communications with individual stakeholders are needed to ensure their participation and inputs.

Box 3.3

The Latvian recipe

The Latvian recipe describes the methodology used to draft a maritime spatial plan for the Republic of Latvia. Special efforts were made to ensure an ecosystem-based approach, stakeholder involvement and transboundary consultation. Regional workshops were held during the whole MSP process following established governmental regulation, to ensure stakeholder engagement in national spatial development processes.

A public participation strategy was drawn up in the early stages to outline communication, including information, consultation and involvement activities – this ensures a better quality of MSP and alignment with the needs and interests of the society. The strategy comprised three main forms of public participation: i) information supply to the public on important aspects of the MSP and opportunities to participate; ii) consultations with stakeholders on different MSP aspects and their perspectives, arrangements for public information; iii) active involvement of stakeholders in data, information and knowledge-sharing; involvement in evaluations and assessments of different issues (Veidemane et al., 2017). Public consultations on a draft marine spatial plan and draft strategic environmental assessment were performed jointly, allowing planners and marine experts to have simultaneous interactions with stakeholders.

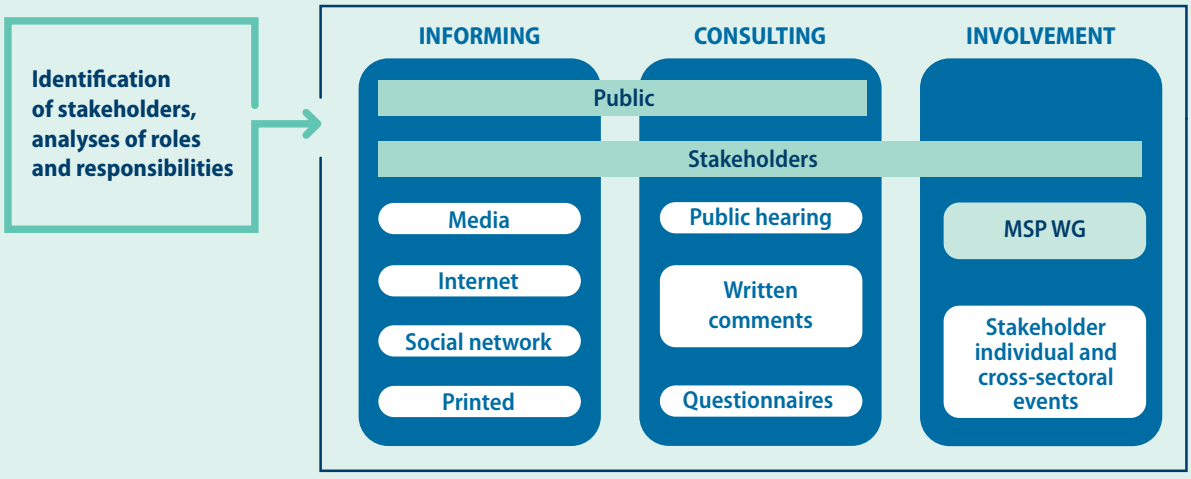


Figure 3.3
Public participation forms and methods employed in the development of the Latvian MSP

Sources: Veidemane et al., 2017; AC Konsultācijas Ltd, 2017.

Box 3.4

Identifying key stakeholders in St Kitts and Nevis

The Federation of St Kitts and Nevis has a total population of 54,000 (2014) and an EEZ covering 11,234 km^2. Nearshore fisheries are important for the local economy and culture and have declined in recent years. Threats to the marine ecosystem included increasing storms, coastal development, unsustainable fishing practices and land-based pollution sources.

The St Kitts and Nevis planning process included extensive consultations with stakeholders to develop proposals and generate a draft zoning design. Identifying key stakeholders was an important part of the planning process and a number of activities were carried out to ensure effective engagement of local partners. Individuals from key government departments such as Fisheries, Planning, Tourism and Maritime Affairs, local non-profit organisations and the business sector were integral to the stakeholder engagement process.

The purpose for engaging stakeholders in this planning process was clearly articulated by the St Kitts and Nevis government when they identified and communicated the benefits of the planning, that is, to more sustainably manage the new and often conflicting uses of the Territorial Sea waters. Engaging with stakeholders was essential for this objective and would lay the foundation for a full zoning plan in the future that supported the development of a more sustainable approach to managing marine resources.

Source: Agostini et al., 2014.

3.5 Identifying sources of funding for MSP

Most governments that undertake MSP rely on direct allocations to their budgets from general revenues. Agencies may be given the responsibility of MSP activities without receiving additional funds – sometimes called 'unfunded mandates'. Other times, agencies will receive partial funds and staff resources to create an MSP team or department but there may be difficulties in sustaining this for the full planning timeline. Reprogramming of resources within agencies or cross-government agencies will sometimes be required but this is, at best, a difficult process. Financing MSP process and implementation has been reported in the last decade as one of the top challenges to developing and completing marine spatial plans.

Public budgets and financing is one option for funding an MSP effort. There are also public-private partnerships whereby funding is secured from government budgets and private grants. New options for the financing of MSP and its implementation are emerging, and in 2016 the world's first debt conversion for oceans was announced by the Republic of Seychelles (Smith et al., 2019) (**Box 3.5**). The next decade will see an increased emphasis on financing a sustainable ocean economy (Sumaila et al., 2021).

As with any other new governmental task, MSP is not possible without adequate financial resources. Although MSP is inherently a governmental responsibility, a common problem occurs when funding, which may be available for MSP pilots, is not available during the whole planning process (IOC-UNESCO, 2009). MSP cannot be successful unless funds are made available. Including financial resources in MSP legislation can ensure that the process is not jeopardised from the beginning because of a lack of funds.

The cost of an MSP process depends on many factors, such as:

- Whether additional human resources are needed to set up a planning team
- Whether the required assessments to characterise the planning area can be done internally or whether they need to be done through external expertise
- Whether it is possible to use existing data and tools, such as data portals, or if new ones need to be developed
- How many and what type of engagement activities will be carried out

In the case of a planning system with different marine spatial plans for each governmental level, the central government might pay for the national marine spatial plan, while local governments pay for subnational plans. If all plans are connected through a nested approach, it is important that the central

Box 3.5

Seychelles debt conversion and marine spatial plan

The Seychelles Marine Spatial Plan (SMSP) Initiative began in 2014 and is a process focused on planning for and management of the sustainable and long-term use and health of the Seychelles' ocean. Seychelles' marine waters encompass 1,374,000 km^2 and 115 islands in 4 archipelagos. The SMSP Initiative is a government-led process, with planning and facilitation led by The Nature Conservancy (TNC) in partnership with the GoS-UNDP-GEF Programme Coordinating Unit (PCU). Funding for the SMSP is provided by TNC through private grants and the Government of Seychelles (GoS).

The SMSP Initiative is an integrated, multi-sector approach to address climate change adaptation, marine biodiversity protection and support the blue economy and other national strategies. The process has a robust stakeholder engagement framework and includes all major sectors of the Seychelles, including commercial fishing, tourism and marine charters, biodiversity conservation, renewable energy, port authority, maritime safety and non-renewable resources, in order to develop a comprehensive marine plan with stakeholder input.

The SMSP is a necessary output from the Seychelles debt conversion, which created the Seychelles' Conservation and Climate Adaptation Trust (SeyCCAT), an independent public-private trust operationalised in 2016. The trust is responsible for managing debt conversion proceeds, including disbursing blue grants and investment assets funded by the debt conversion deal. Under this deal, private philanthropic funding and loan capital were raised, and SeyCCAT then extended loans to GoS to enable the purchase of US$21.6 million of sovereign debt at a discount. GoS now repays SeyCCAT on more favourable terms, allowing SeyCCAT to direct a portion of the repayments for financing of marine conservation and climate change adaptation projects and, in the long term, for the implementation of the SMSP. Additional funding is provided through grants to GoS, an Oceans 5 grant awarded to TNC, and some private funders. Approximately US$250,000 is spent to support the SMSP process per year and the SeyCCAT Blue Grants Fund distributes US$700,000 per year to conservation and climate change projects.

New marine protections, formally announced in March 2020, are a key part of the SMSP that will be completed in 2022. The SMSP will also address the sustainable use of marine resources in the remaining 70% of ocean, support the blue economy and address climate change adaptation. The SMSP will coordinate appropriate regulatory compliance and integrated government oversight of all activities, so that there is effective management of the marine zones during implementation.

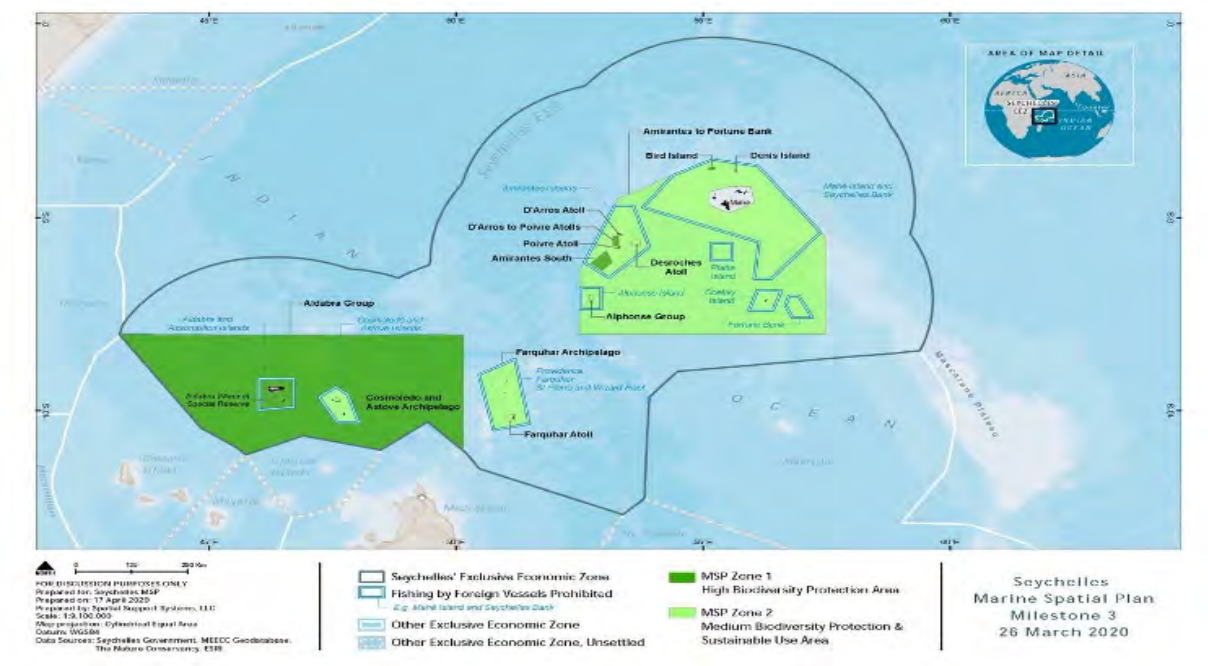


Figure 3.4
Seychelles Marine Spatial Plan

Source: https://www.seymsp.com

government ensures that local, and if relevant also regional, governments have both financial and capable human resources to develop the plans.

As MSP is for many countries a subject with a limited experiential basis – knowledge about the costs associated with the planning process and how to finance marine planning may be insufficient and, consequently, decisions about the size of plans and their feasibility are unreliable. Often, the amount of work and length of the planning process is underestimated. It may be concluded that the additional costs associated with greater than estimated workloads and/or overruns in terms of time can be avoided (or at least the risk reduced) by investing in good project planning at the outset and throughout the MSP process.

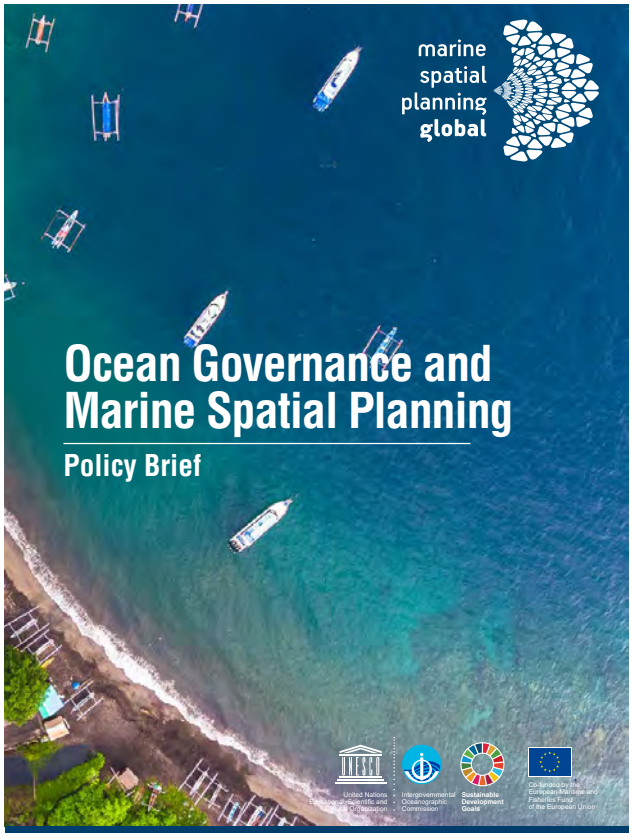
It is also important to ensure an equitable distribution of burdens and benefits, including a system to compensate or to reconvert those activities that may be affected by new or emerging users.

A sustainable financing strategy for MSP should be tailored to the specific financial, legal, administrative, social and political conditions in a particular place or country. Some financing mechanisms require payment for marine resources, whether or not they are consumed. This challenges traditional ideas that marine resources are free public commodities and instead requires users of marine goods and services to pay for those benefits. In any case, the legal regime of the public maritime domain usually includes economic-financial regulations for its use (fees and charges) that can contribute to cover the costs of planning. The CBD (2012*a*) advises modest, but consistent amounts of financial support such as user fees, instead of large grants that can create dependencies and then jeopardise the policy when funds are no longer available.

When government revenues are not sufficient to develop MSP, there are a number of other ways to attract funding, such as specific taxes, projects, grants or donations (IOC-UNESCO, 2009).

The sustainability of the plans are ensured in some countries through taxes for those using the sea (e.g. China, Australia). In regional areas shared by several coastal countries with marine space/use conflicts or problems of a multijurisdictional nature, the creation of a specific regional fund to finance plans can act as an incentive for their development by ensuring that transboundary issues can be satisfactorily addressed in an equitable manner. For example, the development of a memorandum of understanding (MoU) between countries for the sharing of costs or financial resources.

Governmental bodies could fund transboundary bodies to undertake MSP-related activities. Within consolidated regional seas, it is possible to make use of existing collaborations to ensure that financing remains within the regional budget.



MSPglobal Policy Brief: Ocean Governance and Marine Spatial Planning (2021).

There are also financing mechanisms available to tackle climate change that could be accessed to finance some specific tasks of the MSP process or objectives of the marine spatial plan. For example, funds for the conservation of climate refugia or funds for blue carbon initiatives that aim to mitigate climate change through the conservation and restoration of ecosystems that can capture and store carbon, such as mangroves and seagrasses, when they are present in the planning area.

When looking for these kinds of financial opportunities, it is important to estimate costs related to the potential climate change impacts in the planning area and the climate change adaptation and mitigation needs in the planning area.

3.6 Identifying existing needs for planning ocean resources at local, subnational, national or regional scale, including transboundary aspects

The above assessment of the legal and governance framework related to coastal and marine issues should clarify whether an integrated planning process such as MSP is needed from a governance perspective (**Figure 3.5**).

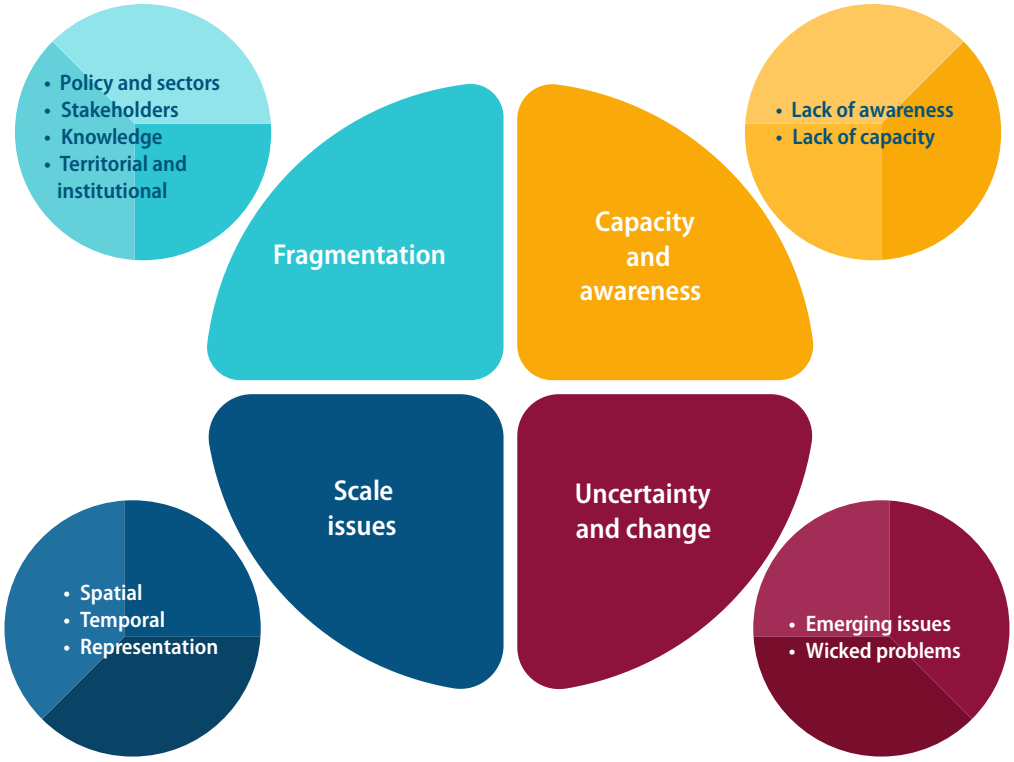


Figure 3.5
Overview of common challenges for ocean governance

Source: UNESCO-IOC, 2021*e*.

Table 3.1
Regional and national examples of identified needs as drivers for the MSP process

Country/Cases	Driver(s) for MSP
Belgium	Small sea space, sea-use conflict, emerging offshore wind farms
USA (Rhode Island, Massachusetts)	State offshore wind farm targets
China (Xiamen's marine functional zoning)	Sea-use conflicts, marine environmental degradation, lack of institutional coordination
Australia (Great Barrier Reef)	Degradation of coral reefs and managing the impact of human activities on the ecosystem
South Africa	Need for more integrated approach to marine management, perceived conflict between uses
Grenada	Blue growth, coastal, marine tourism and sea-use conflicts
Seychelles	National marine biodiversity protection target (30% of the EEZ and Territorial Sea)
EU coastal Member States	Legal obligation under the EU MSP Directive
Coral Reef Triangle Initiative on Coral Reef, Fisheries and Food Security (Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, Timor Leste)	Reversing degradation of coral reefs, ensuring food security through improved fisheries management, addressing climate change

Sources: European Commission, 2017; European Commission, 2019.

A second, or parallel, assessment concerns whether MSP is necessary when the context includes existing, emerging or potential:

- use-use and use-nature spatial conflicts
- synergies between/among users (multi-uses)
- strategies to promote specific maritime sectors or the whole ocean economy (e.g. blue economy strategy)
- strategies to promote area-based conservation (e.g. network of MPAs)

It is important to define a concrete set of motivations and drivers for a given MSP process. These should be clear enough, as this is part of the MSP process itself. **Table 3.1** provides an overview and examples of drivers, issues and overarching objectives of some of the MSP cases around the world – the identified needs are the drivers and should be at the core of the MSP objectives. These can be identified through analysis of the legal and governance framework, although this is more likely to happen through formal and informal consultations with different levels of public administration within a country, regional bodies, maritime sectors, interested stakeholders and citizens. It is important to note that the identification of drivers and need for MSP should consider the geographical context, existing coastal and marine resources and perceived conflicts, political drivers, national and international legislation and commitments.

3.7 Defining how MSP will be established within the existing governance and legal frameworks related to the coasts and ocean

3.7.1 What is the legal basis?

Once it has been agreed that MSP is a necessary policy, the next step is to define how it will be established within the existing legal and governance framework.

One of the first questions is about which type of policy instrument MSP should be, i.e. legally binding or a voluntary guiding approach? Best practice (e.g. the EU's *Better Regulation Toolbox*)[1] advises following the 'proportionality principle' when deciding on the type of policy instrument. This means that i) the policy intervention should not go beyond what is necessary to achieve the objective, and ii) the choice of instrument should be based on experience gained from previous policies.

Point ii) means that it is highly recommended to choose either a *binding* or *guiding* marine spatial plan, according to the context. Therefore, the diagnosis carried out for this part of the guidelines should indicate the most suitable type of policy instrument. While a new norm (or set of norms) might be created, another option could be a modification of existing ones to accommodate MSP.

What are the key components of MSP legislation?

- Introductory elements
  - Definitions/Interpretation (e.g. legal, technical and scientific terms)
  - Geographic/Jurisdictional scope
  - Objectives
  - Guiding/Interpretive principles
- Governmental and administrative elements
  - Planning authority (existing or new)
  - Advisory/Consultative multisectoral body (existing or new)
- Planning elements and procedures
  - Plan elements (e.g. maps, narrative descriptions)
  - Criteria (e.g. for conflict resolution)
  - Types of zones (if any)
  - Plan adoption, adaptation and revocation
  - Maritime sectors included in the plan
  - Plan duration and periodic review
  - Binding effect
  - Relationship of the plan with other laws (including traditional rights, if any)
- Public participation and access to information
  - Which information will be publicly available, and how
  - How the public can participate and how their input will be considered (e.g. consultations)
- Sustainable financing
  - Funding sources and mechanisms
- Enforcement and compliance
  - Offences and penalties
  - Enforcement authority
  - Grandfathering provision (i.e. grace period for pre-existing activities to come into compliance)
- Others
  - Subsequent regulation (e.g. to detail instruments)
  - Monitoring, etc.

Source: Environmental Law Institute, 2020.

1 https://ec.europa.eu/info/sites/info/files/better-regulation-toolbox.pdf

Box 3.6

South Africa MSP Act and Framework

Operation Phakisa in South Africa represented the major initiative to explore the full potential of the ocean's wealth to drive economic growth. At the time, the National Environmental Management of the Ocean White Paper, gazetted in 2014, had spatial planning as one of the strategic objectives. However, it was recommended that a new MSP legislation which was not based on a sector specific legislation was needed.

The MSP Act was passed in 2019, which makes MSP binding, enforceable and endorsed at a national political level in South Africa. It also paved the way for the development of the Marine Spatial Planning Framework (South African Government, 2019).

Binding

The Act applies to MSP on or in South African waters and binds all organs of state. Marine Spatial Planning Act, 2018, Act No. 16 of 2018 § 3(1).

Defined objectives and principles for MSP

The objects of the Act are to:

a. develop and implement a shared MSP system to manage a changing environment that can be accessed by all sectors and users of the ocean;
b. promote sustainable economic opportunities which contribute to the development of the South African ocean economy through coordinated and integrated planning;
c. conserve the ocean for present and future generations;
d. facilitate responsible use of the ocean;
e. provide for the documentation, mapping and understanding of the physical, chemical and biological ocean processes and opportunities in, and threats to, the ocean; and
f. give effect to South Africa's international obligations in South African waters. Marine Spatial Planning Act, 2018, Act No. 16 of 2018 § 2 (South Africa).

Relationship and precedence over other legislation

The Act established that in the event of any conflict between the provisions of this Act and other legislation specifically relating to MSP, the provisions of the Act prevail.

Established authority for MSP and National Working Group

The Act specifies that the Ministry of Environmental Affairs is responsible for MSP. It also defines the role of the Technical Advisory Group as an intersectoral working group. Marine Spatial Planning Act, 2018, Act No. 16 of 2018 § 13 (South Africa).

International and Regional Harmonisation

The principles of South Africa's international obligations and cross-border cooperation apply to MSP. Marine Spatial Planning Act, 2018, Act No. 16 of 2018 § 5.

Iterative

The marine area plans must be reviewed at least every five years and, if necessary, amended. Marine Spatial Planning Act, 2018, Act No. 16 of 2018 § 14.

Source: Environmental Law Institute, 2020.

Table 3.2
Advantages and disadvantages of new legislation for MSP

Potential advantages of new legislation for MSP	Potential disadvantages of new legislation for MSP
• **Clear authority** Drafting new legislation can provide a clear and unconditional authority/mandate for MSP to be implemented. This demonstrates political will and clear leadership towards a common goal/vision that will produce a multi-objective outcome • **Unconditional application** Enabling a 'fresh start' by avoiding getting entangled in existing legislation and its accompanying governmental arrangements that could jeopardise the successful outcome of MSP • **Continuity** Clear authority and leadership for MSP enables institutions to take up appropriate roles and responsibilities, thus ensuring efficient functioning when the support of high-profile advocates becomes less evident later on	• **Time-consuming:** Creating new legislation requires specific legal and competency for drafting legal text and time for approval at the different levels of government • **Inflexible:** If new legislation is not drafted in a way that promotes a multi-objective outcome (whatever that might mean for your area), it can become an inflexible instrument. In many cases, it will be extremely difficult to renegotiate key elements of new legislation, particularly if it was only recently developed • **Undesired outcomes:** Legislation does not necessarily provide the desired outcome. Even the best intended legislation can end up being very far from what you originally set out to achieve • **Decreased political support:** As most initiatives to draft new legislation require considerable time, they might not be possible within the timeframe of one political term or administration (frequently only four or five years). Consequently, most politicians and high-level officials will be reluctant to provide support for MSP without evidence of at least some results during the course of their political term/administration. The politician, judged by the voter, often feels the need to compromise long-term vision in favour of more obvious short-term accomplishments

Source: IOC-UNESCO, 2009; UNESCO-IOC, 2021*e*.

Most MSP legislation relies on zoning to implement the marine spatial plan. Each zone included in the plan is intended to prioritise a particular ocean use or set of uses. For many countries, legislation specific to MSP is the only way to ensure implementation of and compliance with the marine spatial plan. In this case, many MSP components described in the following parts of this guide might have some initial definition already established in MSP legislation (law and related regulation), such as the planning authority, the geographic scope of the plan and guiding principles.

The type of planning philosophy ('meta-governance') should also include definitions relating to other aspects of the plan:

- multisector or limited to a few sectors
- (more) emphasis on economy, social or environment
- comprehensive governance or spatial planning
- one large-scale plan or a nested approach

It is also necessary to clearly define how MSP will be connected to other national policies (i.e. horizontal integration, including cross-sectoral integration) and administrative levels (i.e. vertical integration from national to local planning and management, such as a nested approach).

3.7.2 Who will be the planning authority?

With regard to the planning system, i.e. the authority and supporting bodies responsible for planning, there are at least four different ways to proceed. First, an existing Ministry could be designated or offered to lead an MSP as the MSP authority (e.g. Ministry of Planning, Ministry of Environment, Ministry of Fisheries, Ministry of Infrastructure, Ministry of Water Management, etc.). A difficulty may arise if the selected ministry has limits to its marine jurisdiction or no cross-sectoral competencies or mandate; other ministries might indicate a concern about bias due to the particular mandate for the Ministry. For this reason, a second option that has been used is to establish an interministerial committee where the MSP is led by committee. Difficulties may arise in making decisions by committee and thus, in these cases, a memorandum of understanding may be signed to clearly identify roles, responsibilities and rules of procedure. Third, some countries have created a new institution or agency to develop and implement MSP. A fourth option is a co-led partnership between two entities, in any case, the choice between these four options should be based on the availability of financial and human resources, as well as the credibility of the chosen authority to lead the process. The planning authority would usually establish multisectoral advisory bodies, such as committees and working groups, in order to structure a participatory governance.

Box 3.7

Marine governance arrangement in Costa Rica

In 2019, the Government of Costa Rica created the **Commission for Marine Governance** by decree covering the marine spaces under the jurisdiction of the Costa Rican State (Gobierno Ejecutivo de Costa Rica, 2019).

The Commission for Marine Governance is an interministerial body which coordinates and articulates the different governmental institutions related to the marine environment. The Commission is responsible for developing marine integrated policies, including the promotion of MSP and the blue economy. The coordination of the Commission rotates annually among the ministries of Environment and Energy, Agriculture and Livestock, Public Security, Public Works and Transports and Tourism.

The decree also defined **Marine Governance Units** for marine planning, management and governance to achieve its sustainable use, conservation and restoration through the coordination of all actions carried out by the government and users. A **Marine Committee** composed of governmental, research centres, fisheries representatives and NGOs needs to be established in each Unit to develop and implement a **Marine Master Plan**, which is the official planning and management document to be developed based on participatory processes and technical and scientific criteria. Marine master plans must be approved by the Commission for Marine Governance.

The **Executive Secretariat of the Commission for Marine Governance** also acts as secretary for the marine committees, with responsibility for coordinating the preparation of the marine master plans and the development of capacities for officials in charge of implementing both MSP and blue economy processes.

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During the initial stages of MSP, such as the legal and governance assessment to build the decision-making frameworks, the competent authorities are identified, as well as the administration responsible for sectoral activities. Here, the 'competent authority' refers to the institution, agency or department that has the responsibility or authority to lead the MSP process. This may be specified in a policy document, governmental decree or regulations. In some cases, there may be more than one agency or institution responsible for the management of marine resources and this must be addressed in the governance framework.

A preliminary capacity analysis should be carried out in order to inform the starting set of skills/competencies and disciplines necessary to undertake MSP effectively and guide recruitment (UNESCO-IOC, 2021*f*).

Capacity development opportunities for MSP are not always available. One option is to train planners with experience in land-based planning in maritime issues. In addition, experts in sectoral maritime issues could be trained in planning.

The capacity of marine spatial planners is only one part. Sectoral authorities, as well as different administrative levels within countries, have a big role in implementing marine spatial plans. Their capacity needs to be enhanced to take MSP designations into sectoral decision-making and planning, as well as into licensing processes (not sectoral).

In addition to governmental authorities, the capacity of expert organisations and stakeholders also needs to be enhanced (**Figure 3.6**). Expert organisations, universities and consultants have an important role, e.g. in data provision. MSP knowledge needs to be developed through dialogue with data providers: planners have to explain what they need and data providers have to explain what they have or can provide. It is important to bridge the science-policy divide.

When developing transboundary initiatives to ensure coherent marine spatial plans between neighbouring countries, it is important to take into account that the countries might be at different stages of the MSP process. Therefore, capacity development will be necessary to ensure effective engagement and cooperation and for all stakeholders to understand the process and their individual and collective role when setting the scene for transboundary MSP:

- Planning strategies and principles
- Marine and coastal management governance arrangements
- Terminology and language
- Stakeholder engagement cultures

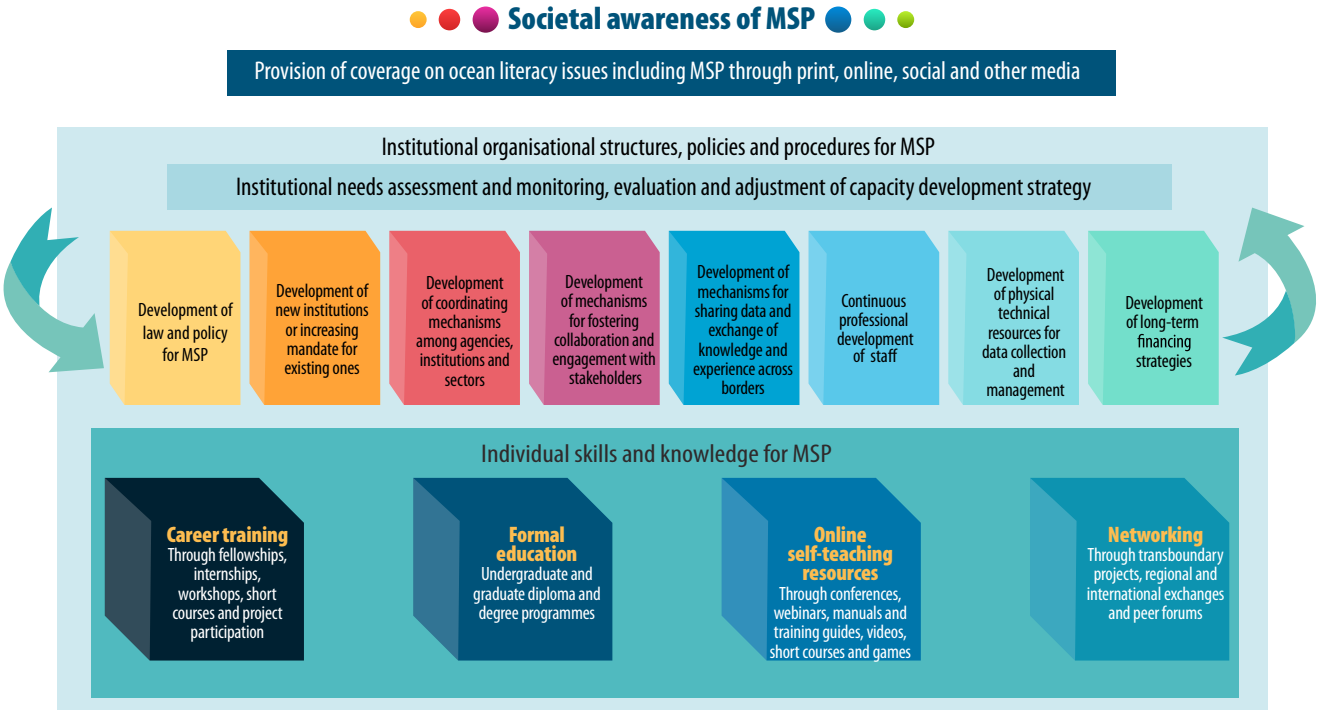


Figure 3.6
Enhancing awareness of MSP

Source: UNESCO-IOC, 2021*f*.

Box 3.8

Using an existing authority and legislation for MSP in Ghana

The legal framework for MSP in Ghana is enforced through an existing legislation, which is the Land Use and Spatial Planning Act, 2016 Act 925. Sections 45 and 46 (1) of the Act mandate the Land Use and Spatial Planning Authority (LUSPA) as the authority responsible for MSP and include the 'marine space' in the scope of the spatial planning framework in Ghana.

The planning area under the Act is defined as 'including the land mass, air space, subterrain territory, *marine space* and reclaimed lands and subject to the planning system provided under this Act and other relevant laws'. The spatial planning framework and hierarchy follows a three-tier system including national, regional and district plans. The development of MSP by land use planning authorities seeks to enhance land-sea interactions. The hierarchy of marine plans are already aligned with the terrestrial spatial planning hierarchies and framework. The Ecosystem Based Approach to an Integrated Marine and Coastal Environment Management in Ghana under the MAMI WATA project is piloting MSP.

The pilot took a subregional approach to implement MSP for four coastal districts in the Western Region, including Ellembele, Jomoro, Ahanta West and Nzema East Districts.

Source: MAMI WATA Project, 2021.

4 Designing the planning process

THIS CHAPTER DESCRIBES

- **The planning team**
- **The work plan and time frame for the MSP team**
- **Planning boundaries**
- **The definition of principles, initial (common) vision, goals and objectives**
- **The identification of alternative spatial and temporal management measures, incentives and governmental arrangements**
- **The planning the monitoring and evaluation of the plan**
- **The risk assessment and development of contingency plans**

This chapter outlines the key steps of an MSP process and sets out how to design and structure MSP work most effectively, including the planning. MSP may seem disorderly to begin with, as there will be many simultaneous questions, opportunities and challenges. However, with some careful work, including a review of lessons learned and MSP information gathered from other sources, an MSP planning process will emerge through a series of well-defined steps. The steps listed in the 2009 IOC-UNESCO MSP guide have been tested in many planning processes over the last 12 years and remain fundamentally sound, even though MSP has evolved to address many complex issues, including climate change and the blue economy. In all cases, the character of MSP remains the same – MSP is a forward-looking process and is anticipatory; at its core, it is for the long-term planning and management of human activities, including sustainable uses of the ocean, resource extraction and conservation. The steps are:

1. Establish the planning team and define the work plan and time frame
2. Draft vision, goals and objectives for the marine spatial plan
3. Set geographic boundaries and levels and develop a data and information strategy to support the planning
4. Develop a stakeholder engagement strategy to jointly design the process and its guiding principles based on inclusivity, transparency and equity
5. Create governance frameworks for decision-making at governmental level
6. Design a communication and dissemination plan
7. Prepare an initial monitoring, evaluation and adaptation plan, including the selection of initial key indicators

The steps presented in this chapter may not proceed sequentially and information gathered in one step may necessitate revising or adapting previous steps. For example, defining the spatial boundary for the plan may occur before or after defining the vision and goals, and a change in the spatial boundary may cause a change in the goals and objectives.

Competent MSP authorities will seek to engage with stakeholders in the most efficient and effective way possible e.g. working with stakeholders on engagement, communications, governance principles, etc. at the same time.

Creating a monitoring, evaluation and adaptation plan is a difficult and lengthy undertaking, but essential to ensuring that MSP has achieved the desired goals in support of the vision. Monitoring and evaluation are also covered in a separate section.

4.1 The planning team

4.1.1 Establishing the competent MSP authority

MSP is a public process that is usually specified by a political process. The authority responsible for MSP may not be the one to implement the plan. The competent authority ideally has the mandate and jurisdiction for maritime space, and is recognised by other authorities and agencies. This enables the competent authority to lead multi-objective MSP in a transparent, inclusive and participatory manner. In some cases, MSP may be led by an agency with a specific mandate for MSP, and in other cases may require multiple authorities, or a co-led partnership. A co-leadership model may require additional considerations and time to develop clear roles and responsibilities. As noted, although MSP involves multi-objective planning, it does not replace single-sector planning or management; other planning may occur simultaneously alongside and integrated within an MSP process. For example, wind energy or aquaculture development plans may be underway prior to an MSP process starting, and on different timelines. The planning authority will be responsible for identifying key points for synergy and integration. A marine spatial plan aims to provide guidance to sector decision-makers so that the sum of all decisions is oriented towards integrated,

ecosystem-based management of the ocean (see **Chapter 7**). MSP is usually implemented through sector-specific plans and policies providing permitting procedures.

In many countries, MSP implementation involves coordination between different ministries, agencies and sectors, including in those cases where there is one nominated MSP authority. The MSP authority does not necessarily have power over other sectors or the mandate to implement all aspects of the plan and must therefore coordinate the implementation with others. In countries where established sectoral administrations – and sometimes sectoral spatial planning – are already in place, MSP simply puts the existing decisions into a wider context, synthesises conflicting interests and establishes how these will relate to the overall goals.

4.1.2 The technical planning team

A technical planning team generally consists of members of organisations leading the MSP processes who are responsible for drafting, developing, revising and/or completing the MSP outputs. Usually, the technical team is formed within or under the direction of the MSP authority and is sometimes referred to as the 'core team'. However, there may be instances where it is not possible for the MSP authority to provide the team.

In those cases where the MSP authority is a small departmental unit with insufficient capacity to lead a technical team, it may be an option to explore the option of having another authority or governance unit with the technical capacity to perform this role lead the team, with the lead reporting to or directly liaising with the MSP authority. A technical team may also be formed outside the MSP authority and work under the authority to develop the MSP outputs. It has not been uncommon in the last decade for the MSP expertise to come from outside the MSP authority. This expertise could be outsourced to a university, research institute or external consultancies.

Technical teams are usually organised as an expert group, working groups, advisory boards, etc., bringing together experts from different agencies as well as universities and other institutions. This was the case of the Canadian example in **Box 4.2**, and similar approaches were used in the Rhode Island Ocean Special Area Management Plan (SAMP) and by the European Union's Member States.

A technical team's capacity would include a range of subject matter expertise in planning, law and policy, coastal and marine sciences, environmental, economic, social and cultural matters. The particular suite of skills, experience and knowledge would generally mirror the goals and objectives of the marine spatial plan and be able to successfully complete the planning tasks, including interactions with sectors affected by MSP.

The technical team will gain enormous experience during the MSP process and be a source of institutional knowledge for the completion and implementation of the marine spatial plan. In cases where the technical team is not situated within the government, it makes good sense to create a clear process to transfer knowledge, information and lessons learned to governmental representatives for them to take on the responsibility and ownership once the external support is finished. This is especially important in the context of pilot projects and for the monitoring of the plan during implementation. For governmental members of the team, it is important to incorporate the MSP work into their job descriptions and/or performance agreements to avoid MSP becoming an additional task only attended to 'when time allows'.

4.1.3 Governmental support

The governmental support refers to authorities and institutions whose decisions and leadership on the development of laws, regulations, approval of financial and non-financial help bring about changes in the design and implementation of MSP.

The essential governmental role is translated into administrative support for finance and budgets, hiring, managing capacity and other roles. If not provided by other entities, the governmental support will also assist with planning stakeholder consultations, including venue selection, scheduling, stakeholder invitations and materials for workshops. Consistent and secured governmental support is key for the efficiency of an MSP process and the interactions between the government and other key stakeholders.

It is advisable to set up an interinstitutional working group at the national level as a steering group or reference group during the MSP process. A steering committee or reference group brings sectoral perspectives and expertise to the process and can help identify additional experts, if needed. Members can be drawn from the same interinstitutional MSP working group mentioned in **Chapter 3** of this guide.

In a transboundary context, the definition of an international partnership within and beyond sea basins (e.g. existing regional sea conventions) could also play a similar supporting role as in the case of the Helsinki Commission (HELCOM) or the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). International and intergovernmental partnerships help ensure equitable representation of all Member States. In these regional contexts, when advancing with transboundary planning, it is important to consider knowledge and data sharing, reciprocal capacity building, pooling skills and expertise across borders from the onset to ensure the efficient use of resources.

Table 4.1
Skills matrix for MSP – Recommended skills and competences

Step	Administrative needs	Technical and scientific needs
Pre-planning (how to set the scene and design the planning process)	• Legal and policy expertise • Fund-raising and budget management	• Policy analysis • Data collection methods • Spatial database management • Existing governance system • Logical framework analysis • Stakeholder mapping
Planning	• Team leader • Project management skills • Fund-raising and budget management	• Team leader • Ocean governance and government relations • Stakeholder engagement (incl. moderation, facilitation, negotiation, conflict resolution, consensus building and communication skills) • Data management and analysis (incl. modelling and scenarios) • Socio-economic and financial analysis • Trade-off analysis • Analytical and problem-solving skills • GIS skills • Coastal and marine ecosystem functioning • Climate change • Sectoral operations • Environmental impacts • Cumulative impact • Seascape assessment
Implementation	• Project/Organisational management	• Knowledge about existing coastal and marine policies and legislation • Stakeholder engagement (incl. training, facilitation, consensus building and communication skills) • Science communication (incl. creating training and references to enable use of MSP data and evidence in decision making)
Monitoring, evaluation and adaptation	• Project/Organisational management	• Understanding a logic model, indicators and knowledge of existing monitoring programmes • Logical framework model/analysis • Data management and analysis (incl. modelling and scenarios) • Systems thinking and analysis • Change management skills (incl. knowledge about amending marine planning policies, zones and legislation)

Sources: Adapted from IOC-UNESCO, 2009 and Ansong et al., 2019.

Governments are responsible for the transition from planning to implementation. In particular, during the implementation phases, public authorities are in charge of the enforcement of marine zones, coordinating management, and ensuring that monitoring of the MSP begins.

4.2 Defining the work plan for the MSP team

Another step in designing an MSP process is to create a work plan and establish timelines. The resources for MSP process management, including people and time, are usually limited, and it is important to prioritise and select key activities to be carried out in the process. Therefore, it is essential to develop a work plan that is practical (enabling prioritisation of work in relation to demands and expectations), flexible, adaptable and that can be maintained over time (IOC-UNESCO, 2009).

A good work plan will directly tie in with the goals and objectives of the MSP process, and specifically address elements with respect to: i) producing the required information and tools for planning; ii) stakeholder engagement and communications; iii) developing the spatial plan; iv) implementing the spatial plan; and v) monitoring and evaluating the planning process and checking whether the plan is leading to the desired outcomes.

Planning pilot initiatives

Pilot initiatives have had an important role in many countries in scoping initial information and building capacity. Capitalising on past pilots can provide a cost-efficient source of data, e.g. considering data and knowledge of such informal initiatives in the formal MSP can potentially save on some of the data collection costs.

Generally speaking, a work plan contains major headings for MSP processes and specifies related tasks, indicating who is responsible, how long each task will take, the deadline, any associated costs or resources needed, and how it relates to or depends on another task (dependencies or conditionalities) (IOC-UNESCO, 2009). In some cases, the procedures necessary for the development of the marine spatial plan are established in national regulations or policy and can include requirements, such as deadlines and legal-administrative actions (see **Table 4.2**).

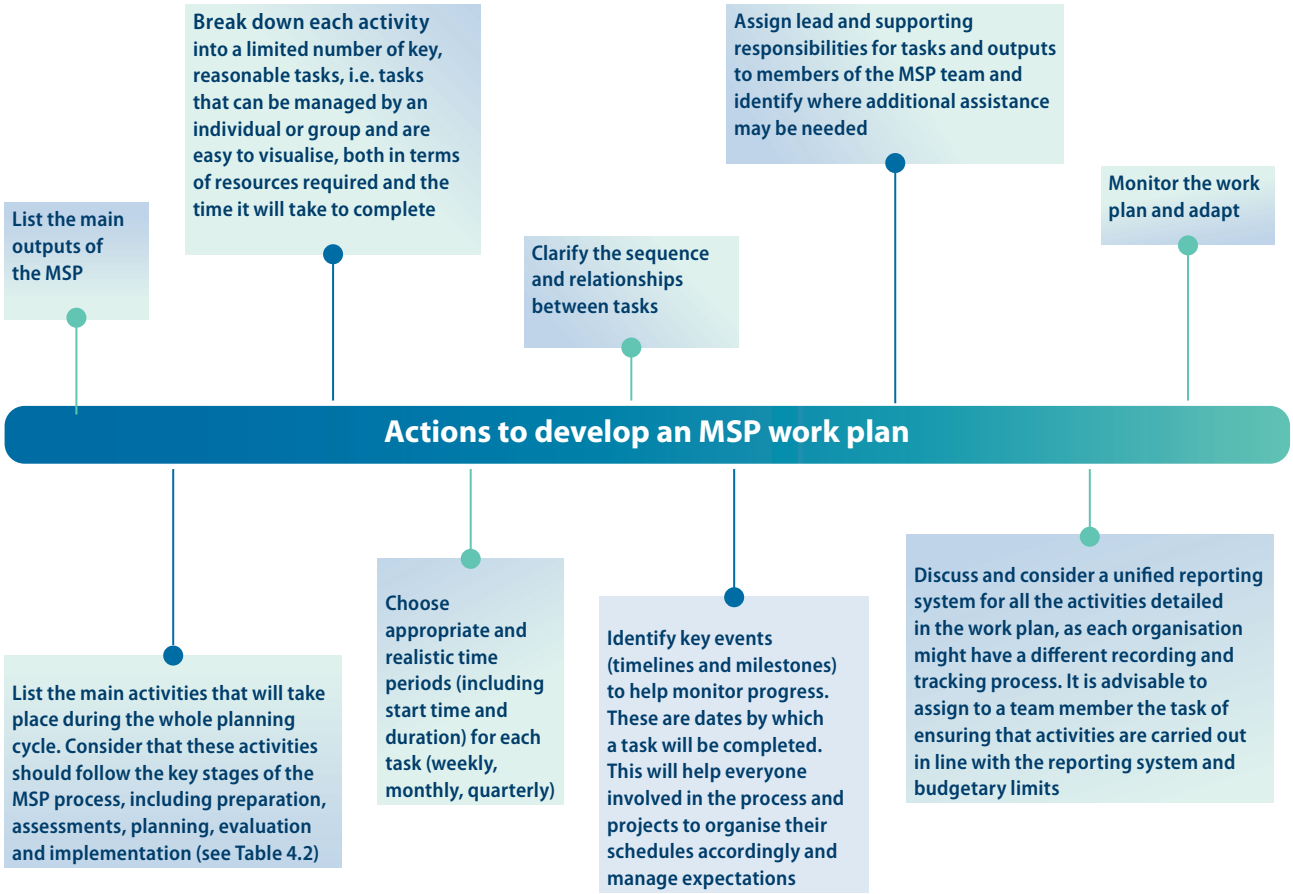


Figure 4.1
Actions to develop an MSP work plan

Source: Adapted from IOC-UNESCO, 2009.

Table 4.2
Sample MSP work plan

Step	Milestone	Time frame
Pre-planning stage (how to set the scene and design the planning process)	Establish and resource MSP function by establishing a marine planning authority and team	• Immediate • Notify regional bodies and neighbouring countries about the start of the MSP process
	Identify and initiate contact with key stakeholders	• End of Year 1
Planning	Establish MSP working group	• Year 1
	Develop initial vision and objectives of the marine spatial plan	• Publish before end of Year 1
	Initiate contact with stakeholder groups (e.g. energy industry representatives, fisheries, coastal communities, etc.)	• In writing before end of Year 1 • Regional workshop/stakeholder forums Q1 of Year 2
	Prepare situational analysis and future scenarios (this phase includes collection, mapping and analysis of data on current and future conditions)	• Publish end of Year 2 • Two-month consultation
	Prepare draft marine spatial plan (including environmental assessments)	• To minister/government Q2 Year 3 • Three-month consultation
The plan	Prepare final marine spatial plan (including environmental assessments)	• To minister/government Q2 Year 4 • Publish and notify regional bodies and neighbouring countries Q3 Year 4
Implementation	Implementation	• Year 4 onwards
Monitoring, evaluation and adaptation	Monitoring, evaluation and adaptation	• Year 4 onwards

Source: Department of Housing, Planning and Local Government of Ireland, 2017.

When defining an MSP work plan, it will be necessary to develop an approach to each of the different tasks of the MSP process. The following sections detail approaches to various parts of the MSP process, such as those related to data and engagement. Whenever possible, the approaches used should be built upon existing frameworks, in order to take advantage of current knowledge and to connect MSP to systems already in place, thereby saving time and resources.

In situations where there is limited capacity on the technical team, it may be necessary to develop high-level work plans for each year, identify key dates and balance developing the outputs with monitoring and reporting progress. Depending on the scope of outputs and timelines, it can almost be a full-time position to administer, maintain and track a detailed work plan.

4.2.1 Initial considerations about required data and information

MSP is widely understood to be an evidence-based process, meaning that planning decisions are required to be based on robust evidence (European Commission, 2017). Assessments for planning (see **Chapter 5**) will require specific data and information relevant for MSP in relation to the current situation, the future we want and the necessary prevision on the potential spatial impact of planning decisions.

The work plan needs to articulate the approach to be taken to facilitate their compilation. This may include:

- Defining the kind of data and information most needed
- Mapping spatial data infrastructures (SDIs) (e.g. existing atlases) and data providers in your country and region
- Defining of data requirements and data quality
- Defining of how to access, store and manage data
- Identifying how to deal with data gaps and uncertainties

When defining the first steps related to data compilation, remember that MSP needs reliable and up-to-date data. Nevertheless, it is important to collate all existing data from all marine sectors, even if it is outdated, as a basis to start the spatial planning – and not wait because the data feels 'too old'. Often, it can be updated fairly easily during the process. The datasets will seldom be organised and available in the necessary format, therefore protocols and workflows will have to be created to access and harmonise the data. Experience has shown that a good solution is to develop a tool that works as a decentralised database connected in real-time to the existing SDIs (Baltic LINes, 2017).

4.2.2 Communication plan

The MSP communication plan will generally include:

- Communication strategy including identification of MSP milestones and the communications that will happen before, during and after each activity
- Share of responsibilities
- Definition of general and specific messages for each stakeholder group (products may include frequently asked questions)
- Communication and dissemination channels, including social media
- Press kit with the necessary background information for decision-makers while keeping the MSP core message as the headline
- Different types of communication materials for multiple audiences
- Stakeholder engagement strategy: how stakeholder feedback will be gathered and how response to this feedback will be communicated
- Consideration of monitoring and evaluation, including setting out when and how in the MSP process communications will be monitored, as well as identification of indicators that will inform monitoring of the communication plan

Key messages to effectively communicate MSP

Communication strategy/Interaction plan

- **Ideally developed by a communication expert but implementation tasks could be shared among the MSP team or carried out in partnership with local authorities, maritime sectors, or NGOs for certain activities.** *Note:* **be aware that while assigning tasks to a non-specialist professional may be more cost-effective, it is also likely to be more time-consuming**
- **Needs to include communication actions defined according to the target groups and the communication strategy's objectives**
- **Needs to include communicating frequent updates on progress**
- **Should set out actions to develop partnerships with:**
  - **i) stakeholders, to contribute to communication material (e.g. content, photos, videos)**
  - **ii) researchers, to encourage them to share their findings that are usable for MSP in a format that is publicly available, jargon-free, includes only key messages and clearly shows the relevance for MSP**
  - **iii) traditional media and social media influencers/ bloggers, to disseminate information about the MSP process, as well as forthcoming activities that are open to a wider audience**

Communication methods

- **Dedicated and interactive website that also acts as a repository of materials in the language(s) of your planning area**
- **Social networks. Social media can be an excellent way to share governmental messages to a wider audience; people in the planning area may have preferences for a specific social media – use it. Social networks also work with the traditional community 'face to face' and should be promoted in areas with limited access to the internet. Rhode Island SAMP, for example, had an 'open house', where on certain days people could spontaneously come in to ask questions and learn about the process**
- **Networking events for MSP practitioners and/or sectoral representatives (governmental and/or non-governmental), in order to improve capacity development in MSP**
- **Training courses on specific topics (e.g. summer schools for young professionals)**
- **Short and visually appealing documents (e.g. policy briefs, infographics, flyers)**
- **Short videos, (e.g. key MSP concepts, importance of maritime sectors in the planning area or summarising major events)**
- **Information panels displayed in key places (e.g. city councils, schools, tourist areas, etc.)**
- **Games designed to engage and inform stakeholders and the general public (e.g. board games, digital simulations, virtual reality)**

In transboundary areas, a brief overview of the MSP process represented as a timeline can be very useful, not only for citizens in general but also to help countries understand the status of the MSP process in other countries within the same sea basin.

Source: Adapted from the interactive EU guide *Communicating MSP: An Inspiring Era of Cooperation between Institutions.*[1]

1 https://ec.europa.eu/easme/en/news/communicating-msp-inspiring-era-cooperation-between-institutions

4.2.3 Develop a strategy for the participatory process

MSP is defined as a public process for multiple objectives and best practice includes participation from stakeholders and a transparent process. It is essential to engage with stakeholders and pay attention to the many variables related to stakeholder engagement. Effective and active participation is critical for the MSP process and outcomes.

The strategy for participation centres on the desire to develop a plan for the future which meets the needs of the government and stakeholders. Using the tenet that 'form follows function', the function of a participation strategy is to capture the information, data, views and recommendations of the people involved.

Stakeholders are individuals, groups or organisations who are (or will be) affected, involved or interested (positively or negatively) by the marine spatial plan (IOC-UNESCO, 2009). A strategy and frameworks are needed to engage with all relevant stakeholders and best practices should be followed for process design and developing outputs using an inclusive and participatory approach.

Developing an MSP participation strategy begins with the following questions:

- What are the goals, visions and outputs?
- What are the legal obligations to engage with stakeholders?
- Who should be involved and/or wants to be involved? What are the sectors, associations, local communities or organisations such as government, industry, academia, private entities, non-commercial entities and associations, NGOs, civil society, youth? What are barriers or challenges for their participation? How to address diversity, equity, inclusion and justice?
- How will stakeholders be involved in a task or stage of the planning process?
- Who will be responsible for leading the engagement activity?
- When will stakeholders be involved?
- What methods will best engage stakeholders?
- How long will stakeholders be involved?
- How much will it cost? How much funding is available to support stakeholders?
- How to maintain a stakeholder database?

Box 4.1

Statement of public participation in Scotland

The requirement to establish a statement of public participation (SPP) for MSP is set out in legislation. The Marine (Scotland) Act achieved royal assent on 10 March 2010. The Act provides a framework which will help balance competing demands on Scotland's seas and introduces a duty to protect and enhance the marine environment and includes measures to help boost economic investment and growth in areas such as marine renewables. The SPP includes principles of engagement, the timeline for marine plan development and details of when engagement will happen, as well as how.

Participation commitment

Marine Scotland, and the Scottish Government as a whole, is committed to ensuring that:

- all relevant stakeholders and members of the public are involved in the development of policies that will impact upon them
- arrangements for participation are inclusive, clear and transparent
- communication is provided through a range of formats and jargon free
- all representations are fully considered

Achieving involvement of our stakeholders from the beginning of this process is vital in the creation of a National Marine Plan that will benefit people not only from the individual sectors concerned with the marine environment but also people living in as well as visiting Scotland.

The participation process will involve a wide range of stakeholders, including key agencies, planning authorities, private sector including fisheries representatives, tourism and recreation organisations, shipping, ports and harbours, marine renewables sector, voluntary sectors and members of the public.

Source: Scottish Government – Riaghaltas na h-Alba, 2020. https://www.gov.scot/publications/national-marine-plan-key-documents/

Box 4.2

Stakeholder engagement in a co-led partnership, the Marine Plan Partnership (MaPP), Canada

The MaPP initiative is a partnership between the Province of British Columbia and 17 First Nations member organisations, which developed and is implementing marine use plans for British Columbia's North Pacific Coast.

The MaPP region is divided into four subregions:

- Haida Gwaii
- North Coast
- Central Coast
- North Vancouver Island

The MaPP initiative was formalised in November 2011 through a Letter of Intent between the provincial government and First Nations organisations. The initiative used the best available science and local and traditional knowledge to develop four subregional plans and a regional action framework.

Marine stakeholders representing multiple sectors provided input and advice to the planning process via advisory committees: four subregional and one regional. In addition, a science advisory committee provided expert technical and scientific knowledge and advice. Stakeholder consultation is ongoing as the marine plans are implemented.

The MaPP plans provide recommendations for key areas of marine management, including uses, activities and protection. The plans inform decisions regarding the sustainable economic development and stewardship of British Columbia's coastal marine environment. Four marine plans were signed in April 2015, a regional action framework was completed in May 2016 and plan implementation agreements were announced in August 2016.

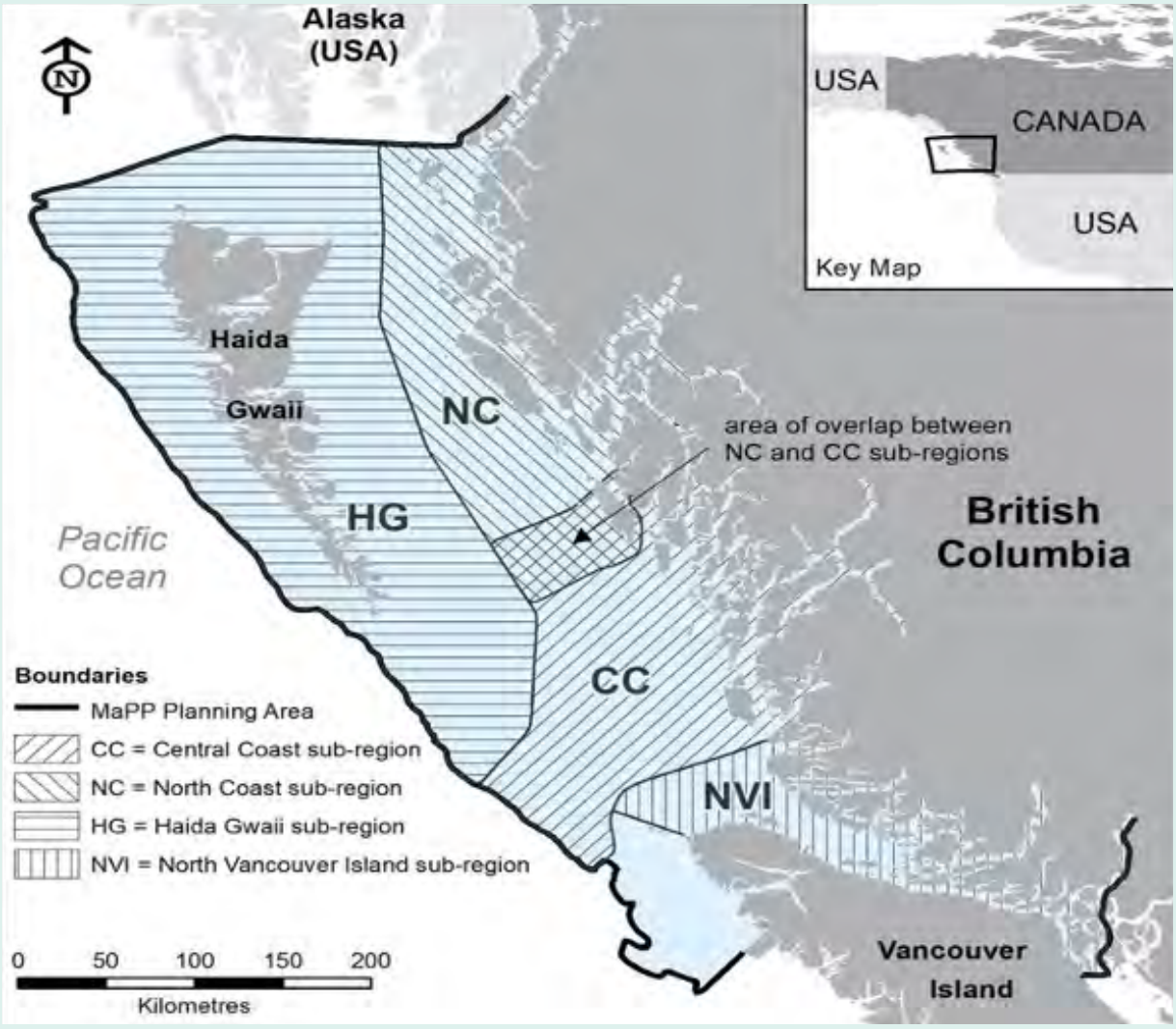


Figure 4.2
Marine Plan Partnership for the North Pacific Coast

Source: http://mappocean.org/

It is important to be aware of representation, power and many other social dynamics when designing a stakeholder engagement strategy and frameworks. To address issues related to attendance, it might be necessary to meet not only the costs of the activity (e.g. meeting room rental), but also the expenses for some stakeholders (e.g. transport and accommodation), particularly those with low socio-economic status. Some MSP processes have created stakeholder engagement funding mechanisms to bolster capacity to support consistent and meaningful participation (Diggon et al., 2020).

A stakeholder engagement strategy will consider the types of formats and methods to gather information, obtain inputs and discuss MSP outputs. It is essential that different formats are used, including in-person workshops and meetings, bilateral and one-to-one meetings, remote meetings, etc. to ensure that stakeholders have a fair opportunity to engage, regardless of distance, internet access, literacy and other factors. The strategy should indicate that stakeholder meeting preparation includes the necessary documents and when the documents will be shared in advance of the meeting.

Timing is also very important, as the engagement process needs to take place at different administrative levels and between different groups of stakeholders. For instance, stakeholders such as fishers and their communities might be best engaged during hours and days when they are not working, e.g. holding workshops in the evening.

Other MSP processes assume that building trust takes time but it is crucial in order to obtain information, acceptance and buy-in. In this context, thinking things through and getting people on board takes time. It is very important to understand stakeholders needs, to ensure transparency from the beginning with empathy and honesty to realistically manage all expectations and contributions.

The 'nested approach' means that in a wide geographical area engagement, hot spots are identified where a more intense engagement takes place. In those cases where not everyone can come to the capital and not everyone is interested in the whole coast but rather in their own area, you will need to use a nested approach and engage locally by placing smaller local engagement activities within the overall engagement strategy for the plan. The matter of stakeholder engagement is fundamental from a social justice perspective. Public participation is usually regulated within political-administrative plans and initiatives, so the MSP must follow the existing procedures for each country. Where indigenous peoples are involved, additional legal and social justice considerations are necessary, including how to develop the MSP using a rights-based approach.

Stakeholders play an essential role in the assessment of distributional outcomes, as well as the performance of the public process per se, including evaluation about how participatory the process was (see **Chapter 8**). Their engagement is also fundamental from a democratic perspective. A broader view of stakeholders should be taken, which includes citizens – after all, MSP is a public policy. A good participatory process also promotes a feeling of ownership and responsibility.

During the designing of the MSP process, it is important to discuss with stakeholders what can be achieved by MSP and the potential role of other marine management tools and processes. It is important that all engaged actors have realistic expectations of the possible outcomes of the MSP process. This is also part of the vision stage of the MSP process.

Table 4.3
Checklist for engaging stakeholders

WHO	• Are/will be affected by MSP decisions • Are dependent on the resources of the planning area • Have/make legal claims or obligations over areas, or resources within the planning area • Conduct activities that impact on areas or resources of the planning area • Have special seasonal or geographic interests in the planning area • Have a special interest in or connection with the planning area
WHEN	• Designing the planning process • Conducting the assessments for planning (including data collection, which can come from stakeholders) • Developing the marine spatial plan • Implementing the marine spatial plan • Monitoring and evaluating the marine spatial plan and process
HOW	• Consultations (public hearing and/or written public comments) • Questionnaires/Interviews • Seminars • Meetings • Hands-on workshops (e.g. participatory mapping) • Forums • Working/Advisory groups • Deliberative committees • (Regular) E-mails providing feedback on the status of the MSP progress

Sources: Bouamrame, 2006; IOC-UNESCO, 2009; Quesada-Silva et al., 2019.

Another important perspective is that in the early planning phases of MSP, discussions and debates typically take place around which coastal or at-sea developments the different sectors and coastal communities want – and which they want to avoid. MSP processes can often be the only mechanism where such broad marine governance discussions take place. Such discussions may identify several important topics that can be better taken care of by policy measures or non-spatial solutions other than the spatial plan. It is important that such topics are recorded and communicated to the respective authorities and forums. The most effective method would be that representatives of these authorities and forums are engaged in the MSP processes, at least as stakeholders.

Stakeholders' experiences of the impacts of the marine spatial plan and their understanding of the impact upon their sectors or communities can be a valuable asset in reducing uncertainties pertaining to the evaluation of MSP.

There are often knowledge gaps in understanding the possible benefits and impacts of MSP in terms of environment, economics and socio-cultural issues. Therefore, before designing methods to measure or verify the effects, you should ensure that mechanisms are put in place to enhance understanding of possible impacts. Inputs from experts and stakeholders should be collected in a deliberative process that acknowledges pluralism. The process should be organised in a systematic and structured way to ensure a broad knowledge base for monitoring and evaluation.

4.3 Definition of the planning boundaries and time frame

4.3.1 Defining the planning boundaries and initial considerations about the scale of the plan

For a marine spatial plan to be legally enforceable or an effective policy document, its boundaries must be in line with the maritime space over which the planning authority has sovereignty or jurisdictional rights in accordance with national and/or international laws. Within that scope, different subnational plans based on biogeographical, geomorphological, functional criteria, etc. can be established.

Ocean life knows no borders, although the boundaries of the marine planning area will not coincide with the boundaries of a single ecosystem, because often a number of ecosystems of varying sizes exist within, and may extend beyond, the designated area (IOC-UNESCO, 2009).

Increasing degree of power sharing
Increasing delegation of functions
Increasing intensity of communication and learning

Influence (characteristics)	Authorities	Participants/interaction among stakeholders
Process responsibility (formal and informal, legally based or as complement, recurrent).	Process leadership partially or entirely delegated to participants but keeping overall responsibility.	Process leadership to some extent delegated to (key) stakeholders, within some type of overall mandate/legislation (e.g. leadership over a local process, responsibility within own sector).
Decision-making (formal, legally based or as complement, recurrent or at pre-defined stages).	Process in hands of authority/political or decision-making/break-off right. Decisions have to be followed.	Veto right/right to vote/break-off point in relation to specific items defined by authority/legislation.
Collaboration (on planning process, concrete tasks, partially informal, recurrent, depending on activities).	Process and decision-making in principle in the hands of authority. Consensus and needs-based collaboration.	Collaboration on tasks defined together, based on consensus and available resources or voluntary contributions based on invitation by the authority in charge. Right to contribute to the definition of activities.
Deliberation: dialogue & learning (partially informal, requires openness, recurrent interaction and mutual accommodation).	Mutual exchange and learning, recurrent. Authority keeps power to adapt process and content, without formal obligation to accommodate insights.	Mutual exchange and learning, without formal obligation for neither part to take in and accommodate lessons learnt. Right to have a say and be listened to.
Consultation (legally based, two-way).	Obligation to listen. Keeps all other rights related to structure and content of planning process.	Active participation. Right to provide views and be listened to.
Information (legally based, one-way).	Obligation to inform. Keeps all rights related to process and content of planning.	Passive participation. Right to be informed about issues and process and decisions.

Figure 4.3
Incorporating stakeholders in MSP processes

Source: Morf et al., 2019.

When defining the boundary of the planning area(s), consideration might also be given to the following factors:

- National and subnational ministerial/departmental remits and competences
- Disputed, unsettled or contested areas where the jurisdictional boundary is yet to be agreed
- Extent and coverage of existing marine and coastal governance initiatives, such as ICZM, river basin management plans, terrestrial plans
- Existing licences/activities

In contested transboundary marine areas, a soft or fuzzy border approach has been used in transboundary MSP projects to explore planning possibilities. This involves defining borders that are not necessarily based on jurisdictional and agreed limits. The soft or 'fuzzy' planning area is for conceptual purposes only, and allows stakeholders to discuss and consider planning options in 'hotspot areas' based on the ecosystem and connectivity across borders.

In addition, the boundaries are not likely to delimit external influences on the designated area, such as land-sea interactions and oceanographic-related processes. Therefore, it is recommended to consider the boundaries for MSP data analysis as broader than the boundaries of the planning area, expanding its limits towards both the terrestrial coastal zone and the ocean.

4.3.2 Defining the time frame for implementing the plan

An important component of the work plan is a schedule that defines how much time you want to spend on each step of the MSP process. Experience shows that it is good practice to have an end date for i) developing a draft plan, ii) adopting a final marine spatial plan and iii) to achieve the objectives of the plan, i.e. implement it.

For both developing and implementing the plan, it is essential to define a baseline year or period to compile data and to evaluate the plan's efficiency.

Implementing MSP is an ongoing, iterative effort. Implementation is continuous and it may be the case that some aspects are applied over time and others in certain phases, such as an evaluation period. During the MSP process, plans can be adapted to changing circumstances. The best way to make sure that MSP is adapted over time is to make provision for this in the legislation.

Land-sea interactions

While the outer (marine) boundary of the plans generally corresponds to that of the EEZ or, where appropriate, continental shelf jurisdictions, presenting no problems other than those associated with their delimitation, the inner or terrestrial boundary is subject to greater complexity.

This is associated with the determination of the respective boundaries of coastal (or terrestrial) planning and the emerging MSP, as well as the consideration of land-sea interactions as part of MSP, and the need to integrate terrestrial and coastal planning with MSP.

This meeting or convergence of plans can lead to inconsistency of objectives and goals, as well as to conflicts at the level of rules and institutions during their development phase.

Land-sea interactions can be interpreted in both environmental (ecosystems and natural processes) and economic (uses and activities) frameworks, as described by UNEP/MAP (2018), or in relation to different categories of interactions: environmental, socio-economic and technical, as expressed by the European Commission (2018).

From the narrower perspective of formal plan development, an additional dimension is that of institutional interaction: between administrative hierarchies, competences and types of plans.

MSPglobal flyer on land-sea interaction (2020).

Both the convergence between marine and terrestrial planning and the consideration of land-sea interactions in the development of MSP make it advisable to act within the framework of an integrated system of political spatial planning (land and sea), and to facilitate the transfer of knowledge from the already consolidated terrestrial planning to maritime planning (Kidd and Ellis, 2012).

The concept of land-sea interactions, when applied to small islands, forces us to consider that such interactions occur fully and completely on the insular territory and that their territorial plans, by their nature, have a marked maritime dimension.

Box 4.3

Baltic Sea broad-scale MSP principles[1]

1. Sustainable management
2. Ecosystem approach
3. Long-term perspective and objectives
4. Precautionary principle
5. Participation and transparency
6. High-quality data and information basis
7. Transnational coordination and consultation
8. Coherent terrestrial and maritime spatial planning
9. Planning adapted to characteristics and special conditions at different areas
10. Continuous planning

Source: HELCOM-VASAB, 2010.

1 https://helcom.fi/media/documents/HELCOM-VASAB-MSP-Principles.pdf

Box 4.4

Six indigenous principles underlying the Haida Gwaii Marine Plan, Canada[1]

1. Yahguudang or Yakguudang – Respect
2. 'Laa guu ga kanhllns – Responsibility
3. Gina 'waadluxan gud ad kwaagiida – Interconnectedness: Everything depends on everything else
4. Giid tll'juus – Balance: The world is as sharp as the edge of a knife
5. Gina k'aadang.nga gii uu tl' k'anguudang – Seeking wise counsel
6. Isda ad diigii isda – Reciprocity

Source: Council of The Haida Nation, 2017.

1 https://coastalfirstnations.ca/wp-content/uploads/2017/06/HGMP-WEB-2015-07-08.pdf

4.4 Defining the principles, initial vision, goals and objectives

One of the key stages when thinking about how to prepare the plan is the definition of initial overarching visions, principles, goals and objectives of the marine spatial plan. It is not expected that one iteration of the MSP process will address all the marine planning issues and challenges. The definition of visions, principles, goals and objectives during the MSP development set the trajectory for the plan and agreement about the desired future.

4.4.1 MSP principles

MSP is a public process that has been developed in different countries according to a number of guiding principles that can be derived from the MSP legislation (if this exists) or a number of sources, including international treaties and agreements, national policy and legislation, or examples of good practice usually agreed within the team and with stakeholders (IOC-UNESCO, 2009).

These principles usually reflect basic ideas about:

- How the process needs to be conducted in relation to stakeholders *(participative; inclusive; transparent)*
- How the plan needs to be developed *(ecosystem-based approach; precautionary principle; knowledge-based; adaptative; climate smart)*
- What the plan needs to deliver *(sustainable development; social justice)*

Enforceable principles are critical to a successful MSP process for a number of reasons. Most importantly, they give decision-makers a transparent and defensible means of making difficult decisions. They also provide a concrete notion of plan objectives for regulated entities and a basis on which interested groups and individuals can engage constructively. **Boxes 4.3 and 4.4** provide examples of principles applicable to MSP in different contexts.

4.4.2 Initial common vision

As discussed in **Chapter 3**, one of the first tasks when establishing or launching an MSP process is the identification of its key drivers and defining the vision for the plan. The drivers can be translated into a draft or initial vision to be shared with stakeholders in order to guide the process and define the anticipated future of the planning area. In some cases, articulating the vision is aided by a scenario-setting exercise in that multiple scenarios are created for what the future might look like (e.g. Haida Gwaii Subregional Marine Plan, MaPP). Importantly, no matter how it is established, the vision needs to be shared among the participants so that everyone is

Box 4.5

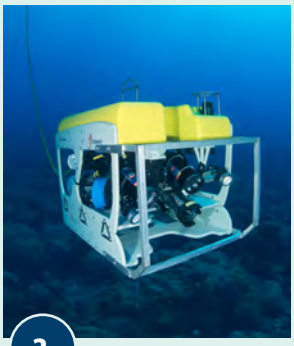
The vision of the Israel Marine Plan

The marine area of Israel will be an integral part of the spatial area of the country and an essential component of its future economic well-being, environmental resilience and social and cultural development for the benefit of its residents and the future generation.

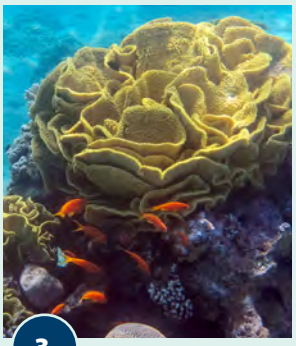
This vision has been determined taking into account the unique characteristics of the Israeli marine space and its natural, economic and cultural values, and sets the general framework according to which the plan goals, policy measures and management policy recommendations were made.

'This will be achieved through the implementation of integrative governance that is ecologically balanced and participatory, the sustainable use of marine resources, the enhancement of the marine landscape and heritage, the promotion of marine research and knowledge, and through the realization of international responsibilities and cooperation.'

1 Governance



2 Knowledge and information



3 Environmental conservation

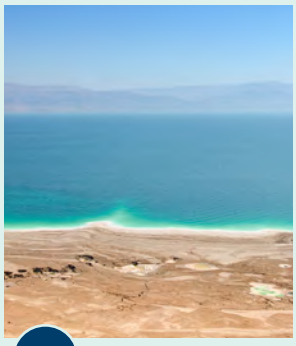
4 Energy

5 Maritime transport

6 Fishing and mariculture

7 Marine installations

8 Security



9 Climate change

10 Public benefit

11 Heritage and culture

12 International cooperation

Figure 4.4
Objectives of the Israel Marine Plan

Source: Planning Administration, State of Israel.

Box 4.6

Initial vision and objectives for MSP in Côte d'Ivoire

The Integrated Marine and Coastal Area Management Project of Abidjan to Assinie (Gestion intégrée de l'aire marine et côtière d'Abidjan à Assinie (GIAMAA))[1] under the MAMI Wata Project[2] is piloting MSP in Côte d'Ivoire. The project began in January 2016 and will run until December 2021. The MSP process is led by the Ivorian Anti-Pollution Centre (Centre Ivorien Anti-Pollution (CIAPOL)). Grand Bassam was selected as a pilot site for the project, as it is a UNESCO World Heritage Property and an important economic area for autonomous ports, beach resorts and hotels, fishing, submarine cables and sand extraction.

A common vision for MSP in Grand Bassam was defined after intersectoral consultation, discussion with stakeholders and the National MSP Steering Committee. The vision seeks to ensure 'a healthy marine and coastal environment in Grand Bassam as a driving force for sustainable development by 2030'. The initial objectives identified seek to reduce conflicts between marine and coastal uses around the Abidjan-Assinie area, including Grand Bassam, by allocating artisanal and emerging activities to specific marine areas. MSP also seeks to safeguard biological diversity and identify ecologically or biologically significant areas (EBSAs), as well as to ensure the long-term provision of ecosystem services to support economic development and well-being among coastal communities.

Source: MAMI WATA Project, 2021.

1 GIAMAA project, available online at https://giamaa-ci.net. See also https://twitter.com/gestion_aa

2 MAMI WATA project available online at https://mamiwataproject.org/pilot-projects/pilot-projects-cotedivoire-context/

heading in the same direction. The following factors should be considered when defining an initial common vision:

- It should be based on strong agreement among stakeholders, government departments etc., reflecting shared inspiration and a desirable time-bound future
- The vision should be broad but guided by some realism in terms of its achievement, thus at the same time challenging and not something that can be easily met and discarded
- The vision should provide a focus for MSP and clarify identified goals and objectives
- The vision could provide a long-term MSP focus that extends beyond political cycles

4.4.3 Goals and objectives

Specifying MSP goals (or strategic objectives, i.e. broad-scale aspirations) and clearly defined objectives is essential to focus MSP efforts towards achieving the desired results (IOC-UNESCO, 2009). It is also appropriate to establish the connections or correspondences between principles, general goals and objectives. While both goals and objectives are expressions of what we want to achieve through MSP, they should also reflect the reality of current and future conditions (see **Chapter 5**) and identify MSP drivers. Discussing the goals and objectives is an important milestone of the political process – it is an opportunity to reach a joint understanding between multiple actors. Therefore, the process of elaborating goals and objectives must be inclusive and foster equity, while focusing on social demands; it should not be driven by short-term interests. Three dimensions of social justice – recognition, representation and distribution (see **Chapter 2**) – can inform both the formulation process and content of the goals and objectives.

Broad goals are needed to provide overall direction and purpose for MSP but they may be too general to inform plan making. It is practical to split the broad goals into more detailed objectives that can be more easily turned into planning decisions. Alternatively, broad objectives can be used to identify distinct sections of the marine plan under which more detailed policies can be developed; detailed objectives are also a key to successful monitoring, as they are easier to follow up than very general goals. Detailed objectives that are realistic, clearly defined and verifiable can be linked to qualitative and quantitative indicators. The broader goals are linked to overall developments in maritime sectors, the marine environment and society.

MSP balances demand for development with the need to protect or conserve the marine environment, while securing social sustainability and equity. It is not just about environmental protection or economic development. The essence of MSP is integrating various sectors and concerns.

Box 4.7

MSP objectives and respective indicators in Ecuador

In 2017, the Ecuadorian Planning Authority published the Coastal and Marine Spatial Plan 2017–2030 including the following elements:

- definition of the planning boundaries
- an assessment of the marine environment and maritime activities
- goals aligned with the objectives of the National Oceanic and Coastal Policies (PNOC)
- objectives related to both planning and management measures
- indicators

The plan covers the whole coastal zone and maritime territory of Ecuador and includes goals such as the promotion of conservation of marine ecosystems and cultural heritage, as well as the promotion of the sustainable use of living and non-living resources.

Table 4.4
Examples of goals, objectives and indicators

Goals	Objectives	Indicators
To promote the conservation and sustainability of coastal marine ecosystems and cultural heritage through public action	To include in the National System of Protected Areas the priority conservation areas classified as 'high' and 'very high' in the National Biodiversity Strategy 2015–2030	Number and surface of new protected areas Surface of marine and coastal territory under conservation
To promote exploration and prospecting in the oceanic and coastal marine space for the sustainable use of living and non-living resources	To plan the exploration for the characterisation of hydrocarbon and mining resources on the continental shelf and possible areas of extension	In progress
	To carry out national fisheries and aquaculture regulations to avoid over-exploitation of the resource and conflicts with other uses or activities	% of implementation of the National Fisheries and Aquaculture Control Plan
	To promote research on geological, fishing and aquatic resources in order to guarantee productive transformation and food sovereignty	Number of areas of priority interest established for the efficient and sustainable use of marine species and geological resources Number of projects or investigations related to geological and hydrocarbon resources

Source: SENPLADES, 2017.

Box 4.8

Examples of MSP goals in Germany

The legal basis for the establishment of maritime spatial plans in the German EEZ is the Federal Regional Planning Act, which was extended to the EEZ in 2004, and last amended in 2017 to implement the EU Directive on Maritime Spatial Planning. In contrast to the territorial sea, the EEZ does not belong to the territory of the Federal Republic of Germany. Maritime spatial planning must therefore respect the freedoms of the UN Convention on the Law of the Sea, such as the freedoms of navigation, overflight and to lay cables and pipelines. It is therefore a matter of 'limited spatial planning'.

The legal regulations for spatial planning in the German EEZ apply to:

- economic and scientific usage,
- ensuring the safety and ease of maritime navigation, and
- the protection of the marine environment.

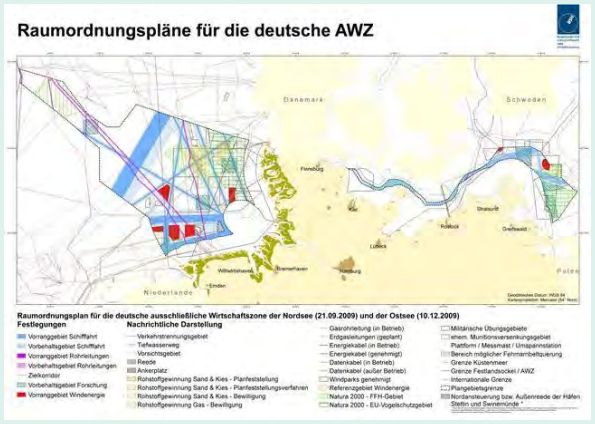


Figure 4.5
Spatial development plans for the German EEZ

Source: Federal Maritime and Hydrographic Agency (BSH), Germany.

SMART objectives and their respective indicators are widely accepted as a relevant basis to evaluate the effectiveness of a public policy. However, experience has shown that MSP evaluation is not an easy task, due to the difficulty of knowing and proving that the observed outcomes were directly associated to the marine spatial plan and not to other possible factors (see **Chapter 8**). One emerging concern is that MSP objectives also need to be equitable and inclusive, so here it is proposed to adopt SMARTIE objectives (**Box 4.9**).

The primary purpose of objectives is to enable the aspirations of the marine plan to be realised. With marine planning being a relatively new process, this can mean objectives are developed that address issues for the first time or in a new way. The novel nature of such objectives will likely create challenges in terms of monitoring and evaluation but such challenges should not be used as a reason to limit the scope of objectives.

An objective-based approach needs to be attuned to the type of MSP that is being developed. If the MSP is going to be strategic and more indicative than steering, the objectives, measures and indicators should be appropriate for this approach. Consideration should be given as to what would be a realistic achievement for this kind of MSP, and through which pathways the objectives could be achieved.

It may take a long time to achieve some of the goals and objectives of MSP. In addition to long-term objectives, it is advisable to set short- and mid-term objectives which correspond to the expected, realistic pathways, as these will provide concrete checkpoints for progress. You should also consider how the marine spatial plan and related documents can influence decision-making in sectoral or other decision-making processes. It is advisable to plan the evaluation of the MSP while setting the objectives, in order to ascertain how you will know when certain objectives are met and identify evaluation challenges that will need to be addressed (e.g. the need to commissioning research or data gathering to support monitoring of novel objectives where data is not available). This can also be useful during the final formulation of the objectives.

Measurable/verifiable objectives play a critical role in evaluating performance, reducing uncertainty and improving MSP over time (IOC-UNESCO, 2009). Depending on the type of MSP, you should consider how reliably and credibly the objectives can be measured. Specifically, in the case of more indicative MSP, it may be very difficult to measure outcomes quantitatively. This is because the outcomes, if understood to mean a preferred change of the use of the sea (or lack of change if the objective is to preserve something), are often influenced by multiple factors, such as economic and technological development. Isolating the

Box 4.9

Let's be SMARTIE defining the objectives

Details are important! Does everyone involved understand your objectives? Are these objectives free of jargon? Have you defined your terms? Have you used simple language?

Objectives should be written in an active tense and use strong verbs like 'deliver', 'conduct' and 'produce', rather than 'learn', 'understand' or 'encourage'. Objectives can help focus the plan on what matters – real results or outcomes.

Make sure the differences between **goals** and **objectives** are sorted out; specify as many objectives as needed to meet each goal.

SMARTIE objectives play a critical role in evaluating the performance of the management plan, reducing uncertainty and improving planning and management over time. Because objectives are used to guide decisions in managing human activities in marine areas, they should be more specific than 'broad brush' statements or overall management aims. For example, generic statements such as 'maintain marine biodiversity' or 'improve water quality for local population' are general statements (goals) about why management has been undertaken, not measurable objectives that can help guide decision-making.

Source: Adapted from the EU's *Better Regulation Toolbox*.[1]

1 Available at: https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox_en

S	M	A	R	T	I	E
SPECIFIC	**MEASURABLE**	**ACHIEVABLE**	**RELEVANT**	**TIME-BOUND**	**INCLUSIVE**	**EQUITABLE**
When the objective is precise and concrete enough not to be open to varying interpretations by different people.	When the objective allows verification of its achievement through indicators. Such objectives are either quantified or based on a combination of description and scoring scales.	When the objective is set at a level which is ambitious but at the same time realistically achievable within the context, knowledge and resources available.	When the objective is directly linked to the drivers and vision.	When the objective is related to a fixed date or precise time period to allow an evaluation of its achievement.	When everyone is welcomed – particularly those most impacted – into processes, activities, and decision/policymaking in a way that shares power.	When the elements of fairness are included seeking to address systemic injustice and inequity.

influences of MSP from other contributing factors can be very difficult. While quantitative measuring might not be possible, a qualitative approach may provide some verification. Qualitative methods might include asking sectoral decision-makers or operators to complete questionnaires about the influence of the marine spatial plan on their choices. Constructing clear pathways towards the outcomes can help to identify the means of verification.

4.5 Planning the monitoring and evaluation of the plan

This section focuses on key aspects of planning the evaluation and monitoring of MSP and on the formulation of indicators.

Chapter 8 describes in more detail the practice of MSP evaluation, and presents approaches for evaluating the planning process and inclusion of stakeholders; the plan and its relevance; implementation of MSP; and results and outcomes of MSP. It also covers the reporting of evaluation and monitoring results, as well as the ultimate goal of evaluation: the adaptation of the plan and MSP process.

The aim of this chapter is to highlight that monitoring and evaluation takes place throughout the planning process (not just after the plan is implemented), therefore some initial thought needs to be given to this task when designing the MSP process.

4.5.1 Objectives, scope and purpose of the monitoring programme for evaluation

The purpose of monitoring and evaluating is 1) to hold authorities accountable and 2) to learn about and improve MSP. Knowing the results and side effects of MSP is essential for its reviewing and updating. How is the plan making a difference in contributing towards a more sustainable use of our ocean? What does the plan deliver to society? Is it doing so or are amendments needed? It is also important to consider contextual factors that influence what it is possible to achieve through this particular marine spatial plan. Then it is important to understand the plan's mandate and what needs to be taken care of in other processes.

We also need to evaluate the process of plan making, e.g. in terms of equity and representativeness, to improve the process in future planning rounds. The quality of the process has implications for the quality of the plan and effectiveness of implementation.

It is preferable to reserve some resources for monitoring and evaluation, but experience has shown that considerably more resources are set aside – understandably – for plan-making than for monitoring and evaluation.

In general terms, the evaluation should explain what works, for whom and why? Methodological choices for evaluation, as well as measuring the impacts or use of indicators, should aim to answer these questions. General questions can be answered by applying alternative methods, the selection of which is also influenced by the availability of resources. Monitoring and evaluation can be resource-dependent and science-based, or they can be more dialogue-based. In fact, a combination of these is recommended, as both have their strengths. Costly monitoring and evaluation efforts are best to focus on the key (i.e. most important) aspects of MSP. Dialogue-based monitoring and evaluation can complement the picture by setting the MSP into a broader societal and economic context. Furthermore, a sustained dialogue around the effects of the MSP is a great way to support the implementation of the plan, as the key actors are kept in the loop!

Evaluation, supported by information gained from monitoring, is an essential part of adaptive MSP. It provides the evidence base for reviewing the plan and for assessing the functionality of the planning process. The extent of the evaluation is limited to the availability of resources. Therefore, it is advisable to make a distinction between what is necessary and what is useful. MSPs typically have several objectives to be achieved, but they are not necessarily equally important for society. Evaluation and monitoring efforts, respectively, should focus first and foremost on the most important objectives and on the most important aspects of the planning process. The scope of evaluation can then be extended as far as the resources allow. The scope of MSP evaluation can be also extended by organising frequent dialogues with key actors and stakeholders who can bring in their own perspectives to complement the results of the official MSP evaluation. There are a number of challenges to determining what effects MSP actually generates, the main one of which is the difficulty of isolating the effects from the marine spatial plan from other factors that may also influence development in the use of sea areas. This, in turn, limits our ability to quantitatively measure progress in MSP.

Quantitative measurement may be easier when your marine spatial plan is detailed and strongly steers uses of the seas. Such planning includes many elements of sectoral management. In these cases, it is feasible to set quantitative targets and to measure to what extent they have been reached. The IOC-UNESCO *Guide to Evaluating Marine Spatial Plans* (IOC-UNESCO, 2014) is a useful basis for the monitoring and evaluation of such a prescriptive and detailed MSP. However, when the MSP system is strategic and guiding, rather than steering, the evaluation and monitoring needs to be designed differently. Then an evaluation approach that looks at MSP from different perspectives and in a broader context can produce useful information.

The other key point pertains to the evaluation process and methods. Maritime sectoral experts and other stakeholders have valuable insights and experiences that can be used to assess how a marine spatial plan has influenced/can influence their field of activity or communities. When conducted in a systematic and structured way, the assessment can shed light on what are likely impacts and through which mechanisms the impacts are generated. Monitoring and evaluation results represent a key piece of evidence underpinning any decision to revise and plan and to help guide the revisions to be made.

4.5.2 Identifying key indicators to monitor MSP

Indicators are useful for monitoring the impacts of MSP or achievement of its objectives. The information they provide can also help discussions with experts and stakeholders. However, it is important to stress that indicators are a supporting tool, not the monitoring and evaluation framework itself, and that they should be used in moderation.[1]

Table 4.5
Types of indicators for monitoring MSP

Context indicators	• Collect information on general developments in maritime sectors and marine environment • Information helps in assessing the relevance of the MSP: is it focusing on the most important issues?
Input indicators	• Collect information on actions and resources to develop plans and responsibilities • Information helps in assessing preconditions for successful planning
Process indicators	• Collect information on the planning process, and from stakeholders • Information helps in assessing the quality of the planning process, including equity and representativeness • Set the standard for a good quality process
Output indicators	• Collect information on planning decisions and studies
Outcome indicators	• Collect information on immediate, intermediate and long-term outcomes, such as licence application procedures and projects resulting from the plan (impact information) • Information will help in assessing progress in the implementation of the plan (milestones) and the results of the plan • *Note:* assess what the influence of the plan has been on the developments at sea

Source: Varjopuro et al., 2019.

The challenges and complexity of identifying the impact of a specific policy initiative among many others is often familiar to those working in government. If available, references related to policy evaluation should be used (for example The Magenta Book published by HM Treasury in the UK)[2] and relevant experts consulted to help inform evaluation planning.

A combination of qualitative and quantitative indicators can produce good results. For instance, quantitative process indicators can follow the number of stakeholder events and number of stakeholders consulted, but more explanatory power is gained when such information is added with qualitative feedback from the stakeholders. This provides a robust basis for the planning authorities to improve the planning process.

Another example of combining qualitative and quantitative indicators is the issue of MSP's influence on the economic development of maritime sectors. Quantitative information on the status and trends of different sectors (e.g. employment, share of GDP) can be used as outcome or context indicators (see **Table 4.5**) to provide a basis for discussion with experts and stakeholders on MSP's observed or possible future contributions to the development of the sectors. The latter provides qualitative evidence.

Purpose of indicators

Indicators have numerous uses and potential for improving MSP in terms of simplification, verification and communication. They can help to monitor and assess conditions, forecast changes and trends (such as providing early warning information), as well as evaluate the effectiveness of the planning decisions. Ideally, for each type of planning decision that will apply to the marine plan you identify should have a performance indicator. Finally, the indicators collect information about the planning process and help to collect feedback from the stakeholders. The three main functions of indicators are simplification, verification and communication.

Formulation of indicators

As shown above, there are a number of useful lists to help with the formulation of indicators for MSP. Since each planning context is different and marine spatial plans can have different goals and objectives, it is unlikely that you will find a ready-made list of MSP indicators that is relevant for your context and fit for your purpose – you will need to formulate and fine-tune the indicators. The UN publication *An Introduction to Indicators*[3] gives the following criteria for designing indicators:

- **RELEVANT**: to the objective or impacts of the MSP it seeks to measure

1 There are several sources for indicators relevant for MSP, including Botero et al., 2016; Buhl-Mortensen et al., 2016; Böhnke-Henrichs et al., 2013; Carneiro, 2013; Day, 2008; IOC-UNESCO, 2014; European MSP Platform, 2018 and Ferreira et al., 2018.
2 See https://www.gov.uk/government/publications/the-magenta-book
3 https://www.unaids.org/sites/default/files/sub_landing/files/8_2-Intro-to-IndicatorsFMEF.pdf

- **MEASURABLE/VERIFIABLE**: observable and readily measured with existing tools and programmes in a timely fashion

  This is an important criterion to consider as collecting data for the indicator is often expensive. It is better to formulate indicators that can use data that is collected for other purposes such as fisheries management, environmental monitoring or shipping surveillance.
- **SPECIFIC**: to the aspects that are to be monitored and be separated from other factors that influence the use of the sea areas and the state of the marine environment

  *This may need expert assessment in cases where the effects of MSP are difficult to isolate (see **Chapter 8**).*
- **SCIENTIFIC**: based on scientific evidence and not subject to biases
- **CLEAR**: easily interpreted by the target audience, especially for aspects of importance to the target audience

  *This may need expert and assessment in cases when the effects of SP are difficult to isolate (see **Chapter 8**).*
- **COMPARABLE**: over time, i.e. consistently measured under the same principles and definition
- **RESPONSIVE**: sensitive to planning decisions and provides timely and reliable feedback on the impacts

  *This may need expert and assessment in cases when the effects of MSP are difficult to isolate (see **Chapter 8**).*
- **COST EFFECTIVE**: monitoring costs of indicator or data collection should not outweigh the benefits of monitoring

4.6 Risk assessment and development of contingency plans

When organising the MSP process, it is also necessary to develop a risk assessment of what could go wrong during the process, as well as what respective contingency measures are available to address the identified risks (IOC-UNESCO, 2009).

For example, certain topics may have to be excluded during the later stages of the MSP process, due to political (power), legal (mandate) or technical reasons (availability of data/information). If this takes place after the visioning or goal/objective-setting stages that were conducted together with different stakeholders, and if those stages achieved joint formulation of the goals, it would be useful to still report such outcomes, as they can be taken up, e.g. in sectoral policy processes.

The Cooperative Research Report No. 327 Marine Spatial Planning Quality Management System[4] of the International Council for the Exploration of the Sea (ICES) includes discussion of technical approaches that can be taken to risk management in MSP (**Figure 4.6**).

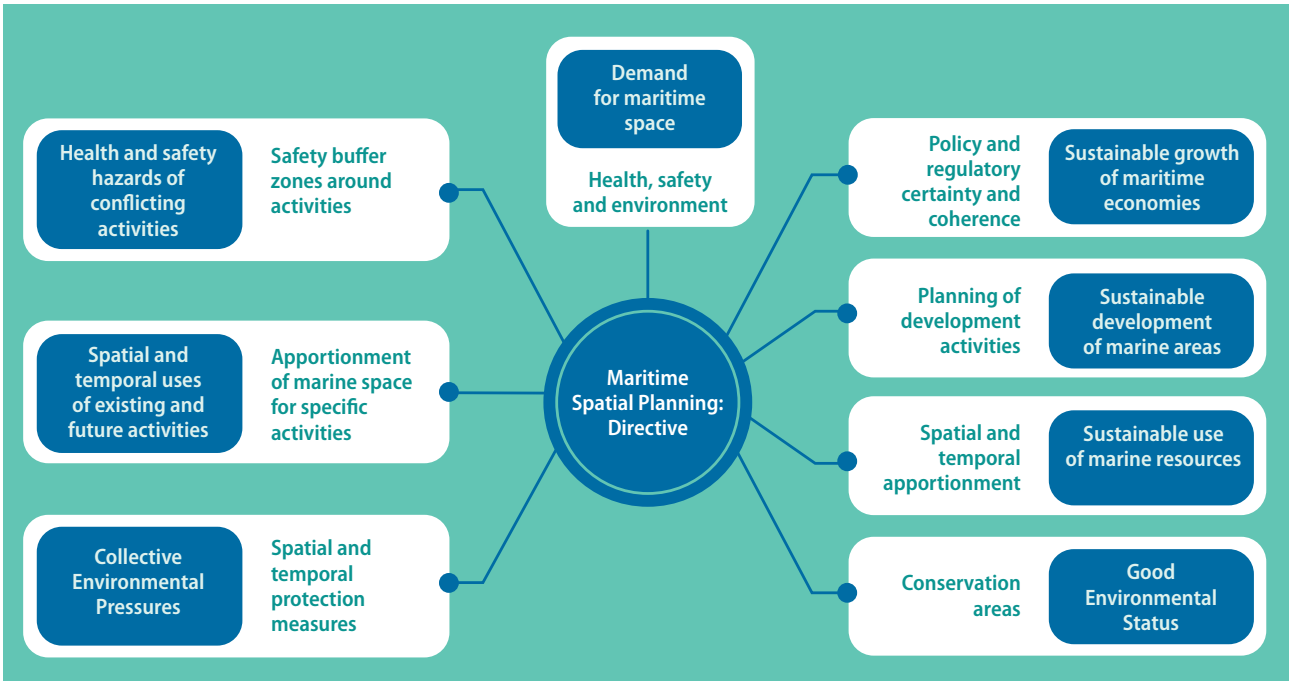


Figure 4.6
MSP quality management systems

Source: ICES/CIEM, 2015.

4 https://www.ices.dk/sites/pub/Publication%20Reports/Cooperative%20Research%20Report%20(CRR)/CRR327.pdf

5 Assessments for planning

THIS CHAPTER DESCRIBES

- **The definition of different planning scales**
- **The identification of existing conditions to map and diagnose environmental, socio-economic and cultural parameters**
- **The analysis of future conditions and trends as well as assessment of synergies and trade-offs between human and environmental interests**
- **The development of public information systems**

The aim of this chapter is to analyse the planning area from environmental, social, cultural and economic perspectives. Knowledge and data about existing activities and conditions are mapped, data protocols defined and data gaps identified. It is also important to address future conditions and trends during the assessment process.

5.1 Defining the different scales of planning

Depending on whether the approach is ecological, socio-economic or governmental, there are important factors to consider in the definition of 'scale' which can subsequently influence the way in which the scale of an MSP will be determined (**Figure 5.1**). To take into account all these considerations, we could define a scale as a jurisdictional, ecological and socio-economic level of the MSP process and its components (subprocesses, activities and features), in space and time.

Before starting any data compilation and further assessments for MSP, the scale of planning needs to be defined because it is an aspect that directly influences the kind of data needed, as well as its resolution.

There are four factors to consider when determining the scale of a plan:

i) the international legal regime of marine waters

ii) marine ecosystems and species distribution and dynamics

iii) range of human activities at sea

iv) the political-administrative organisation of adjacent territories

Of these factors, the legal regime is key, as it determines the normative framework and source of legitimacy for decision-making in the planning area. In addition to the prevailing legal regime, a number of the factors set out here can be used in combination to determine the scale of a plan.

The plan (or set of plans) of a State should be linked to an area over which sovereignty or jurisdictional rights are exercised – and to which the granted planning mandate applies.

Depending on the physical geography and the political-administrative organisation, the legal scope may be divided into territorial sections, whose constituent factors are one, or a combination, of:

i) the legal regime itself of its waters, seabed and subsoil;

ii) the political-administrative organisation (regions, provinces, local entities, etc.);

iii) the ecosystems or parts of ecosystems existing within the legal scope.

What outputs are expected?

- **A (permanent) solution to access the data needed, i.e. the definition of an agreed routine for long-term data management.**
- **A diagnostic, including inventory and maps, of ecologically or biologically sensitive areas and current human activities in the planning area.**
- **Assessment of the (relative) importance of different sea uses and ecosystem services in social, cultural and economic terms, including the spatial dimension (e.g. mapping of social, cultural and economic dependency on marine resources/space, plus the land-sea interaction perspective).**
- **An assessment of possible conflicts and compatibilities among existing human uses and between existing human uses and the environment.**
- **An assessment of natural resources and environmental carrying capacity to ascertain whether the area could be used for development.**
- **An assessment of suitability for marine space development to explore which kind of activities could be suitable for development.**

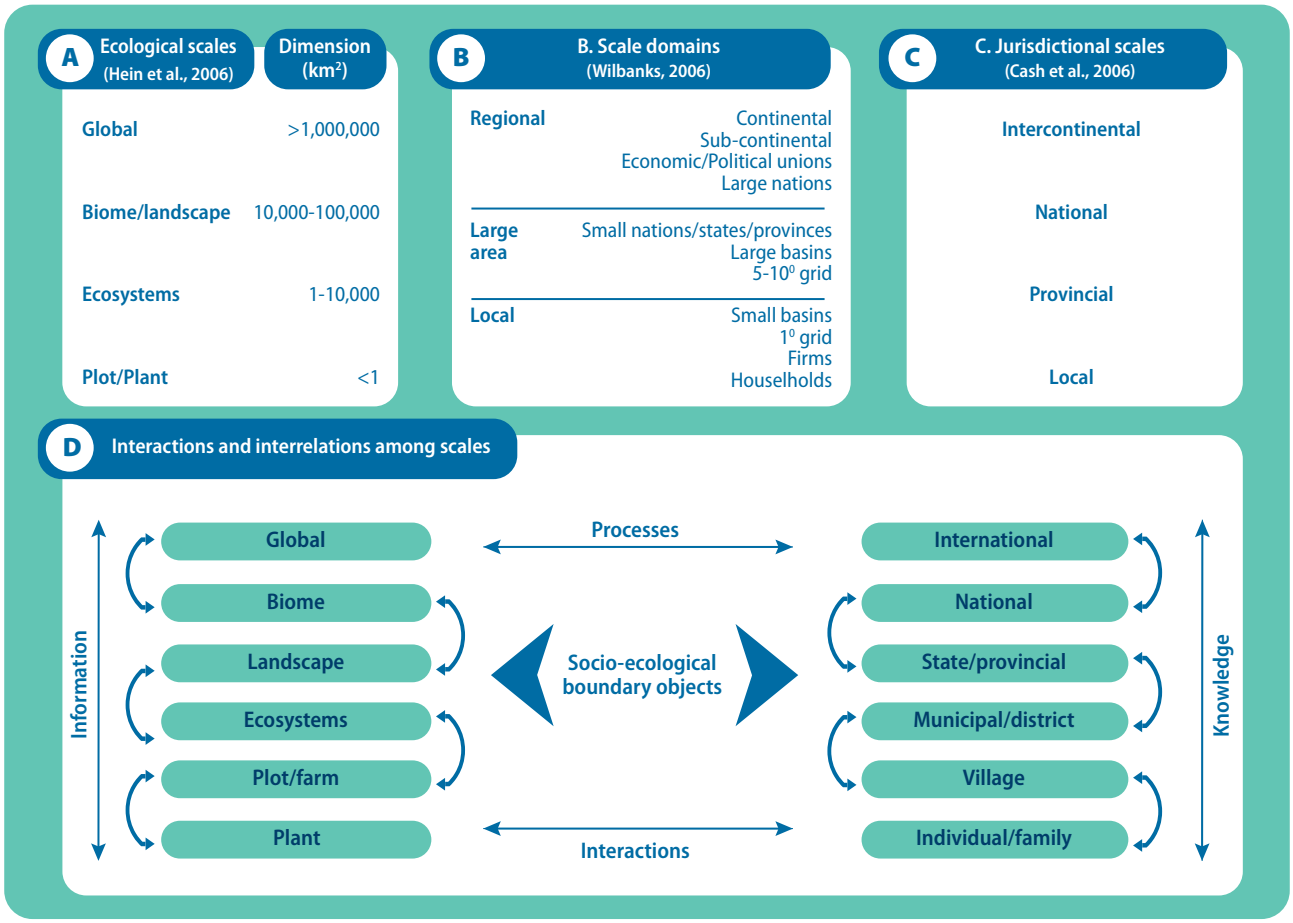


Figure 5.1
Hierarchical representations of scale and scale interactions

Source: Minang et al., 2015.

Within the limits of the legal scope, and depending on the geographic and geopolitical configuration, a hierarchy of plans (**Table 5.1**) and/or typology of plans can be established to outline the temporal development, administrative action, order of priorities or level of detail, ranging from formulating strategic lines to specific interventions.

The geographical scale of a plan is generally determined by the scope of action. Thus, the cartographic documents of a plan of national scope will have variable scales, adapted to the extent of the territory:

- Local
- Subnational
- National
- Cross-border and transboundary (see **Section 2.2.5**)
- ABNJ

MSP is generally being conducted at large geographical scales, including consideration of regional and land-sea interactions. There are difficulties between scientific management and effective resource management for a transboundary approach, due to the complexity of demonstrating the interest of the transboundary approach in marine planning. To explain these tensions: a legal basis for defining a transboundary zone barely exists, and national and subnational authorities therefore select the jurisdiction of the MSP over their waters. There may be procedural obstacles for authorities seeking to work together across borders, including misaligned administrative structures and processes, technical difficulties in sharing information, language barriers and other barriers to good communication (Jay et al., 2016).

Depending on the legal regime of the maritime space, different scales may have international dimensions; in the EEZs, international issues have greater weight, as a consequence of the rights enjoyed by third States in relation to plans that focus on maritime spaces whose legal regime is the territorial sea. Specifying what type of administration is connected to the given marine area also provides accuracy on the size of the space and its political-administrative implications. Thus, a plan managed by a local administration (where the legal framework of the coastal state permits) will generally address issues of a more ad hoc dimension.

Table 5.1
Different factors related to planning geographical scales

Geographical scale	Description	Denomination	Political scale	Morphology and morphological elements	Maritime jurisdiction	Ecosystems
1:45,000,000	Geographical scope of treaties	International scale	International treaties	Ocean basins (subglobal)	EEZ / High seas	Large marine ecosystems
1:35,000,000	Specific geographical areas subscribed to regional maritime management conventions	International-Regional scale (Macroregion)	Regional Convention (UNEP / Regional Seas)	Ocean basins	EEZ / High seas	Ecoregions
1:15,000,000	State's juris-dictional waters as a whole	National scale (Meso-region)	State	Ocean sub-basin	EEZ Territorial sea Internal waters	Bio-geographical regions
1:15,000,000 1:2,000,000	Marine subdivisions established for State's jurisdictional waters as a whole	National-regional scale	Federation States / Autonomous regions	Gulfs, estuaries, bays, inlets	Territorial sea Internal waters	Continental shelf and slope Seamounts Submarine canyons Marine phanerogam prairies
1:900,000 1:300,000	Marine subregions and subzones established in each of the national-regional scale subdivisions	Subregional scale	Provinces Municipalities Counties	Gulfs, estuaries, bays, inlets	Territorial sea Internal waters	Continental shelf and slope Seamounts Submarine canyons Marine phanerogam prairies
1:260,000 1:70,000	Special marine planning areas and scope of port spaces	Local scale	Municipalities Port authorities	--------	--------	--------

Source: Suárez de Vivero, 2001.

The situation is complex because there is a wide typology of contacts between countries, their different jurisdictional areas and, in turn, between maritime spaces under national jurisdiction and beyond national jurisdiction. The diversity of border types requires different legal and political treatments. However, there is a lack of precision in the normative and technical texts related to MSP, which affects the correct interpretation of cross-border or transboundary cooperation.

Some of the activities within the scope of the plan tend to have a greater degree of interaction, and take place across jurisdictional limits. These are areas where property rights converge, resources move with the seas, marine dynamics distribute/mobilise natural elements or objects, or the environment itself functions as a circulation space (transport). Fishing, traffic, pollution, leisure, conservation or environmental protection all require international management based on consistent cooperation practices.

It is also possible for national marine spatial plans to be adjacent to International Seabed Authority plans, regional environmental management plans, or area-based management tools under the agreement (under negotiation) on biodiversity in ABNJ.

Box 5.1

Establishing cross-border frameworks for maritime spatial planning

Member States of the European Union should consult and coordinate their plans with neighbouring countries and should cooperate with third-country authorities in the marine region concerned in conformity with the rights and obligations of all parties involved under the Union and the international law.

Article 1 of the European Directive establishing maritime spatial planning reads:

1. This Directive establishes a framework for maritime spatial planning aimed at promoting the sustainable growth of maritime economies, the sustainable development of marine areas and the sustainable use of marine resources.

2. Within the Integrated Maritime Policy of the Union, that framework provides for the establishment and implementation by Member States of maritime spatial planning, with the aim of contributing to the objectives specified in Article 5, taking into account land-sea interactions and enhanced cross-border cooperation, in accordance with relevant UNCLOS provisions.

Effective cross-border cooperation between Member States of the European Union and with neighbouring third countries requires that the competent authorities in each country to be identified. EU countries therefore need to designate the competent authority or authorities responsible for the implementation of this Directive. Given the differences between various marine regions or subregions and coastal zones, it is not appropriate to prescribe in detail in this Directive the form those cooperation mechanisms should take.

Cross-border cooperation is intrinsic to the occupation and use of maritime space, which is why it must be taken into consideration in a plan, especially when sharing a sea basin, where decisions made on one side of the border might have consequences on the other side. It can also be a framework for resolving disputes arising from jurisdictional claims between states and/or territories.

It is advisable to carry out a prior evaluation of geopolitical risks when promoting a plan with a cross-border focus. Bilateral or multilateral cooperation between States is only one of the possibilities to be taken into account. The cross-border/transboundary dimension requires a highly detailed approach to planning, in order to design the legal and political mechanisms that make it viable.

Interaction with ABNJs (from one or several States) can take place in scenarios of considerable complexity.

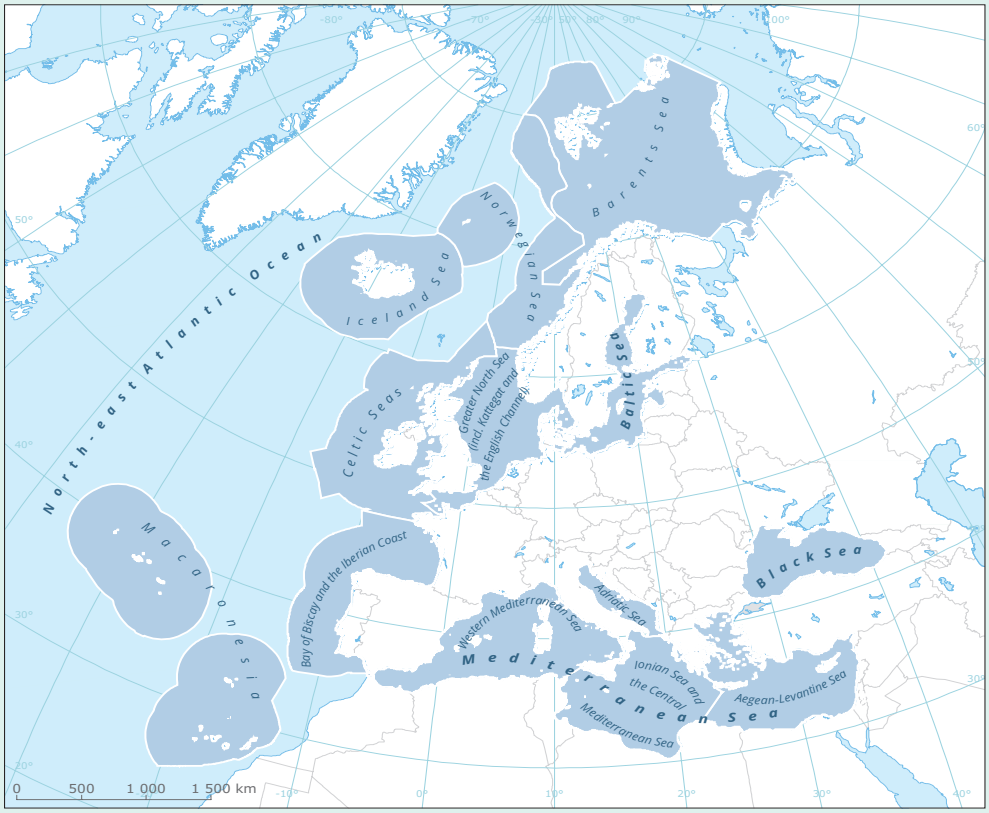


Figure 5.2
European Regional Seas

Sources: EULEX, 2014; European Environment Agency, 2015; adapted from UNESCO-IOC, 2021*i*.

5.2 Identifying existing conditions

Identifying existing conditions is the process of understanding the situation in the marine space being planned. This provides information on the current physical, biological, social, economic and governance characteristics of the marine plan area.

Spatial data and planning evidence is at the core of MSP. The subsections below address the kind of data necessary to assess the current conditions of the planning area in relation to the different aspects that characterise the socio-ecological system under analysis.

As explained earlier, a strategy for data compilation and management is needed during the development of the work plan. It is necessary to define data categories, and protocols to build a public information system (or feed, when it already exists) to organise the data, which will be used as inputs to run different analyses. Due to the time-consuming and expensive nature of data collection, it is important to prioritise and gather relevant data based on the MSP issues already identified for solving the issues. This is especially useful if MSP is being carried out for the first time. Harmonising data makes it compatible, accessible, usable and transparent. In conducting a review of available data, you should look for spatial and temporal information that covers most of the planning area. As surveying and monitoring is also time-consuming and expensive, it is better to start with existing government sources, such as data on marine environment, fisheries management or shipping surveillance. Physical oceanographical information may also be available.

MSP Input Data required for analysing initial conditions
Oceanographic spatial information (ocean temperature, waves, currents…)
Data on marine environment (eutrophication level, benthic habitat status…)
Marine conservation (extension and objectives of Marine Protected Areas...)
Information on coastal and maritime activities (aquaculture, ocean energy facilities, coastal tourism, ports and harbours…)
Socio-economic information (coastal population, unemployment, income by sector…)
Governance information (administrative units, prospecting permits…)

Figure 5.3
An example of a tailored MSP input data framework for analysing existing conditions, adapted for the needs of the MSP project PLASMAR, in the Macaronesian region of the Atlantic

Source: Abramic et al., 2020.

Box 5.2

Data harmonisation – not always a cross-border issue

Project PLASMAR: Benthic habitats harmonisation
Spatial information on marine benthic habitats of depths up to 50 m in the Canary Islands (Spain) was gathered through survey campaigns (*Ecocartográficos*) from 2000-2008. Unfortunately, as these surveys were delivered by different consulting companies, the data sets have different structures and 176 different types of habitat classification. The data analysis showed that the elevated number of habitat classes was a semantic issue that could be resolved with a standardised classification system.

In order to analyse, update and reuse benthic habitat spatial information efficiently, a common data structure was applied. Data sets on benthic habitats were harmonised following INSPIRE Directive principles and applying standardised classification systems:

1. European Nature Information System (EUNIS) – 26 habitat classifications;
2. Marine Strategy Framework Directive Classification – 12 habitat classifications;
3. Spanish national standard on marine habitats and species – 43 classifications.

Applying EUNIS standard makes it possible to harmonise national mapping with the European Marine Observation and Data Network (EMODnet) habitat mapping products, as both data sets are using the same classification system.

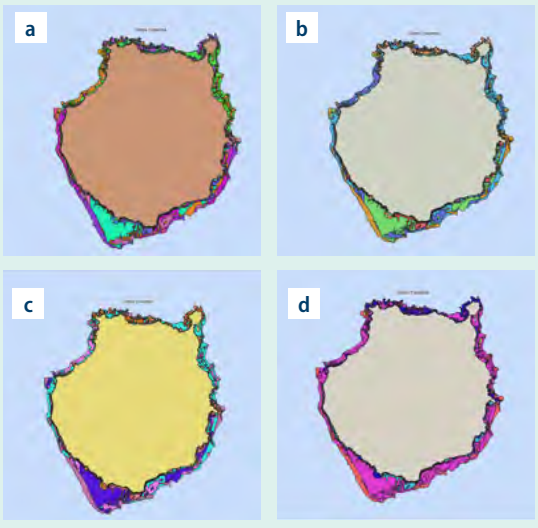


Figure 5.4
a. Gran Canaria (Spain) non-harmonised benthic habitat map; **b:** applied EUNIS classification system; **c:** applied Spanish national classification system for marine habitats; **d:** applied Marine Strategy Framework Directive Classification.

Source: PLASMAR Consortium, 2020.

Participatory mapping as a source of data and information

Participatory mapping is a map-making process that attempts to make visible the association between land or ocean and local communities by using the commonly understood and recognised language of cartography (IFAD, 2009). Maps present spatial information at various scales, using a paper or a digital map, serve as a medium of empowerment by allowing local communities to represent themselves spatially.

© UNESCO-IOC/MSPglobal, 2020.

Stakeholders participating in a mapping exercise may share valuable details that are often not present in spatial databases, such as conflicts and synergies with other users, personal perspective on the importance of specific areas for the sector, as well as the impacts of potential loss of accessibility.

Building trust is an essential step to ensuring a successful participatory mapping, while in the case of traditional knowledge, it is also necessary to request prior consent from indigenous peoples and local communities before using the data (Ntona and Morgera, 2018).

TIP
Assessments at transboundary level

A good way of improving alignment between neighbouring plans is to strengthen the network and collaboration across both sea basins and administrative borders, and especially between planners and environmentalists with an administrative mandate to plan the area.

It is important to consider the existing conditions together with neighbours, especially in relation to cross-border areas (species and habitats, human activities and environmental pressures can cross borders). Where possible, countries should apply regional sea collaboration in marine observation and data collection.

It is key to make a diagnosis of the transboundary aspects of the area under analysis. Some countries may have concerns about the influence of other countries on their territory. A potential way to enable collaborative working is the establishment of an ecosystem-based approach for MSP (that will highlight the connectivity and continuity of ecosystems between countries), as well as a delimitation of the topics under discussion, restricting them to what is really transboundary.

Consider harmonising symbols and legends used in mapping across the different countries.

It might be helpful to show the boundaries of neighbouring countries, infrastructure projects (existing, proposed or planned) and ecosystems that are close to or across jurisdictional borders.

It is recommended to strengthen the network between national sector authorities across borders within the sea basin. Ideally, this should be delivered under the umbrella of joint projects.

The required information may be identified by following already defined frameworks, or a newly developed framework tailored to the MSP objectivities particular to a given situation.

There are also global initiatives led by specialised agencies of the United Nations (e.g. FAO, IMO, UNEP, UNESCO, UNDP or the World Bank) or regional organisations (e.g. European Union, African Union, Regional Sea Conventions) which are significantly improving data collection by setting data protocols, standards and ontologies.

Most initial data collection and mapping can be done through specialised inter-agency working groups and by consulting experts/stakeholders on various topics. Data can be further identified from scientific literature.

During the task of compiling data and information, it is important to conduct a data gap analysis, as well as be transparent when data is missing and what consequences this might have for decision-making. It might also be useful to set up a plan on who, how and when to deal with missing information. Compilation of new data requires field measurements, something that is not always possible within the deadline and resources available. However, the identified data gaps could be forwarded to research programmes and then be available in the next planning cycle.

Compiling data for MSP requires specific technical skills (e.g. GIS skills) due to the importance of spatial data in the planning process. The characterisation, i.e. the diagnosis, of the area requires knowledge of spatial data compilation, analysis and management. Indeed, nowadays there are many technological tools (or 'decision support tools') that can assist with this step. It is important to bear in mind that transboundary MSP might have different data, harmonisation and interoperability requirements.

Building new marine data systems can be expensive and slow, but it is possible to develop MSP in data-limited situations without sophisticated set-ups.[1] A practical and less costly starting point could be participatory mapping of areas of use. Participatory mapping is usually needed even in situations where a lot of data is available. Participants will not all have datasets to show their high priority areas, and existing data may not be representative of future scenarios. Participatory mapping has been a component of MSP since at least 2006 and there are multiple tools, including online web-mapping or decision-support tools like SeaSketch that supported marine planning in Canada (Diggon et al., 2020) and Adobe GeoPDF in Seychelles (Smith et al., 2019).

In addition to the mapping, the MSP process should enable permanent solutions for storing and archiving the data, making it accessible for future decisions, and for creating protocols to maintain the key datasets needed for implementation and monitoring.

Three general categories of spatial information are relevant for MSP: (1) biological and ecological distributions, including areas of known importance for a particular species or biological community; (2) spatial and temporal information about human activities; and (3) oceanographic and other physical environmental features (bathymetry, currents, sediments) which, in the absence of comprehensive biological data, can be especially important for identifying different habitats and important processes, e.g. upwelling areas.

The mapping of jurisdictional and administrative boundaries will also be relevant when governmental arrangements are considered. In conducting a review of available data, you should look for spatial and temporal information that covers most of the marine management area.

Data can be collected from many sources, including: (1) scientific literature; (2) expert scientific opinion or advice; (3) government sources; (4) local knowledge; and (5) direct field measurement. Most MSP efforts rely heavily on the first three sources of data, although local knowledge is increasingly recognised as a valuable source of information for MSP.

5.2.1 Identifying, understanding and analysing existing environmental conditions, including environmental global changes

The marine environment is a 3D ecological system covering a diversity of ecosystems from coastal to deep-sea, including their respective pelagic and benthic biodiversity, which are distributed according to oceanographic characteristics.

Examples of data needs to assess the existing conditions

List of spatial data to characterise the environment:

- Oceanographic features like currents, convergence zones, upwelling
- Bathymetry and depth
- Priority areas for conservation (e.g. MPAs, Biosphere Reserves, EBSAs, etc.)
- Benthic geomorphology, shallow and deep
- Deep corals and reefs
- Key ecosystems and community-forming species (e.g. coral reefs, seagrasses, mangroves)
- Distribution and abundance of key species (e.g. cetaceans, turtles, elasmobranchs, seabirds, fish, invertebrates)
- Breeding areas
- Nursery areas
- Feeding or foraging areas
- Seasonal differences, taking into consideration different life stages of species
- Sea-surface temperature (SST)

List of data to characterise the environmental status, including indicators:

- Water quality (nutrients, dissolved oxygen)
- Marine litter
- Biodiversity loss
- Invasive species
- Habitat loss

While there is only one ocean, its heterogeneity and connectivity should be well integrated in MSP processes.

The use of maritime spaces and resources must be planned with regard to the environmental carrying capacity and ecosystem resilience, and reflect the regional and local context. This means that the negative impacts of human activities in the environment need to be minimised so that they do not disrupt ecosystem functions or cause biodiversity loss.

For planning purposes, the environmental characteristics can also be used to divide the national territory into different planning regions, particularly in countries with extensive maritime territory. However, this decision should not be taken without considering the internal administrative boundaries and planning system of the country.

1 For an example of designing MSP in data-limited situations, see Flower et al., 2020.

Box 5.3

Identifying and refining EBSAs through MSP: Namibia

Namibian MSP is characterised by its forward-looking approach, driven by the anticipation of blue growth and the protection of marine resources. The Namibian MSP process introduced systematic conservation planning as a subprocess from the outset. This included collecting data about environmental conditions, existing and projected human activities and identifying areas of high biodiversity. The process led to identifying areas of least conflict, based on existing and projected human uses for conservation. These areas are not MPAs but areas that can be considered for future identification and designation of MPAs. The approach led to the definition of two MSP zones: one that prioritises biodiversity features and another that prioritises the management and minimisation of the impact of human activities. It also led to refining the boundaries and coverage of existing EBSA based on the analysis of human activities carried out within the MSP process. This approach is seen as distinct from the conservation process, as it considers the human uses and features that need protection.

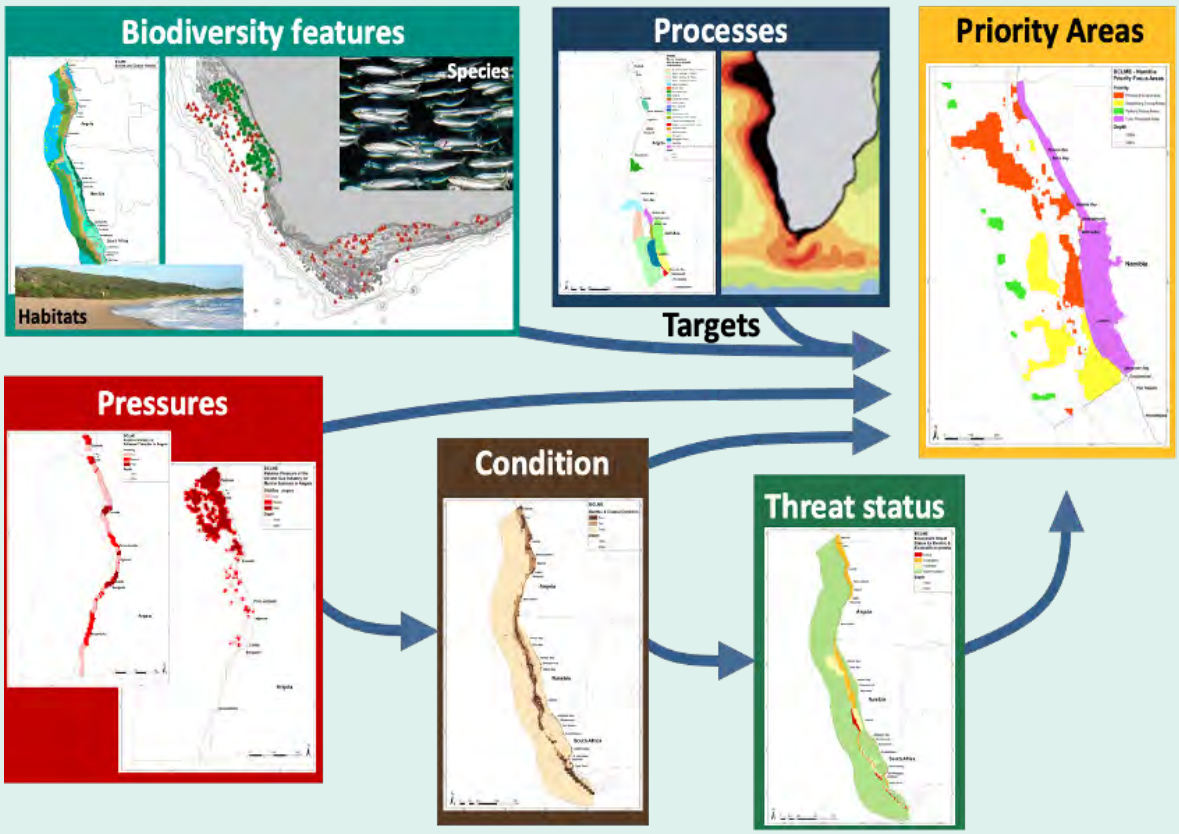


Figure 5.4
Characterisation of the Namibian jurisdictional marine waters

Sources: Finke et al., 2020; Harris et al., 2019; Holness et al. 2014; Kirkman et al., 2019.

Examples of data needs to assess existing physical conditions

List of spatial data to characterise physical oceanographic conditions:

- Bathymetry
- Currents
- Waves
- Temperature
- Salinity

List of spatial data to assess coastal risks and vulnerabilities:

- Coastal erosion
- Flooding areas
- Sea-level rise
- Hurricane winds
- Storm surges

Box 5.4

Information systems and public data in support of MSP in Pacific SIDS

MACBIO (Marine and Coastal Biodiversity Management in Pacific Island Countries) believes that open-source spatial planning tools are an essential and sustainable solution for Pacific island countries and supports its Pacific partners in using these open source tools in interactive formats.

With these tools, Pacific Island Countries can plan for biodiversity conservation and resource management. To this end, MACBIO gathers and consolidates spatial data on behalf of the countries through the development of means for designing marine spatial plans that support ecologically sustainable use and protection of ecologically representative examples of marine and coastal systems.

The marine atlases compile hundreds of datasets and for the first time makes this treasure trove of marine and coastal information accessible and usable – as maps with complementing narratives, as data layers and as raw data.

Source: MACBIO, 2021 www.macbio-pacific.info

Examples of spatial data needs to assess the existing socio-cultural conditions

- Maritime and underwater cultural heritage
- Coastal features
- Sunken and buried features
- Use of coast and sea
- Past use of coast and sea
- Religious and other socio-cultural areas
- Traditional land tenure
- Cultural ecosystem services

5.2.2 Identifying, understanding and analysing existing physical conditions, including coastal risks and tectonics

Physical conditions in the coastal and marine areas relevant for MSP include physical oceanographic variables, as well as events related to coastal risks such as erosion, floods and hurricanes/cyclones. Tectonic activity and its consequences (earthquakes, tsunamis and volcanoes) cannot be neglected when planning.

Physical oceanographic conditions are crucial to define the location of some maritime sectors (e.g. offshore renewables). On the other hand, coastal risks can have a direct impact on coastal activities, while also affecting the coastal areas and infrastructure linked to offshore uses, such as ports (land-sea interaction).

5.2.3 Identifying, understanding and analysing existing social conditions, including cultural aspects and human well-being

The social dimension is normally part of a finely balanced 'socio-environmental' or 'socio-economic' sphere, which is crucial to our understanding of societal relationships with the sea. Indeed, these dimensions – social, cultural, environmental and economic – are like interwoven layers that make up a complex system that characterises the planning area. As far as the social dimension of MSP is concerned, this can be assessed from a socio-cultural and a human well-being perspective (McKinley et al., 2019).

Socially important areas can be mapped taking into account different criteria, such as:

- Cultural values (both tangible and intangible)
- Spiritual/religious values
- Aesthetic/seascape values

Box 5.5

Seascape character assessments (socio-cultural aspects)

Seascape character assessment (SCA) is a method for assessing, characterising, mapping and describing the relationship between people (culture), place (natural environment) and how that informs the setting for everyday life. Seascape character assessment has been used in MSP to inform and tailor policies and decisions about where certain infrastructural projects can be located, based on which seascapes are different, special and valued by people.

The SCA is undertaken under the following broad steps:
Step 1: Defining the purpose and scope, how much work is carried out regarding the underwater and seascape environment, the resources required, those who should be involved in its preparation and the types of judgements that are needed to inform decisions.
Step 2: Desk study. This involves the analysis of various sources and types of data to help identify areas of common character, the mapping of draft seascape character types and/or areas, along with the preparation of initial descriptions of natural and cultural influences.
Step 3: Field survey and stakeholder verification to test and refine the draft and describe the seascape character types and/or areas identified in Step 2 and to capture aesthetic, perceptual and experiential qualities.
Step 4: Classification and description. This final step refines and finalises the outputs of the character assessment process by classifying, mapping and describing seascape character types and/or areas.

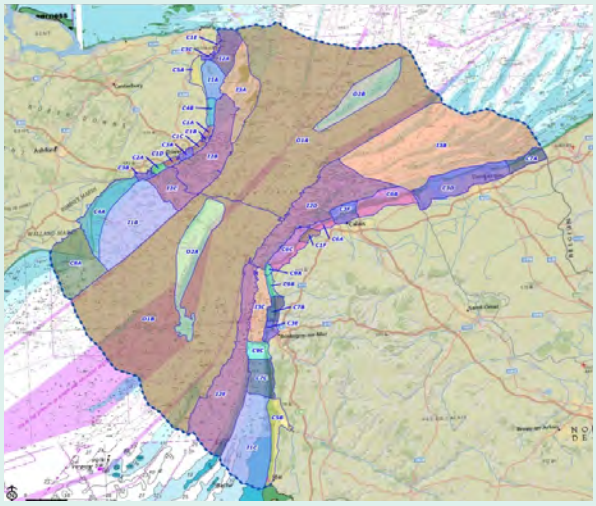


Figure 5.6
Dover Strait Seascape Assessment

Sources: Adapted from Natural England (2012) and Marine Management Organisation (2018).

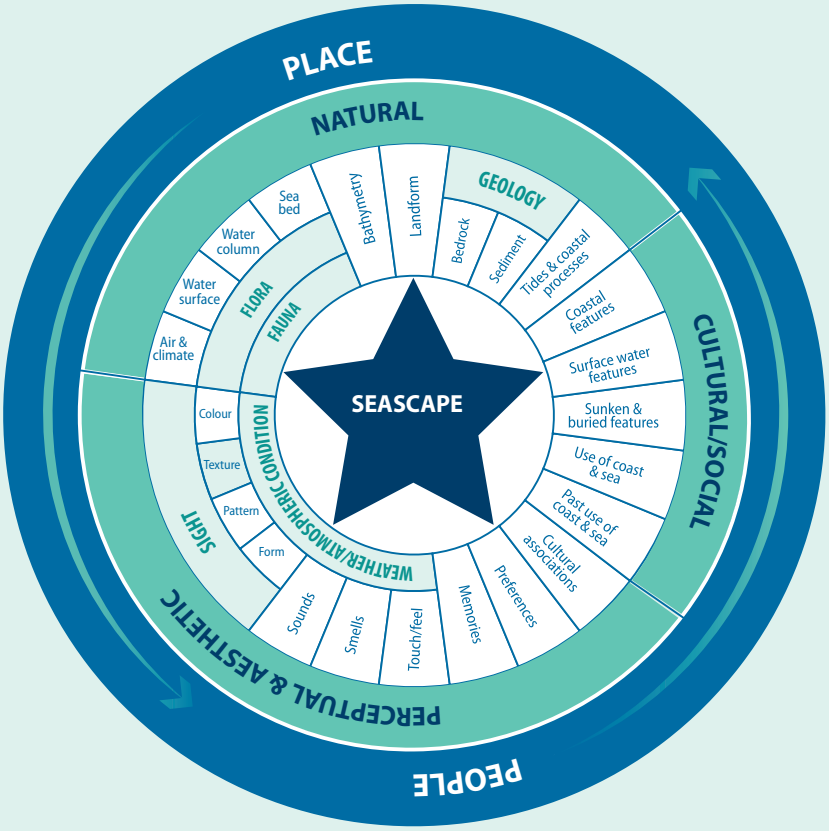


Figure 5.5
A summary of what constitutes seascape

Mapping these areas will probably require investigations not already carried out in the planning area, because this is still an emerging research field. Studies on cultural ecosystem services, for example, seem to be inspiring this kind of assessment for MSP.

The key challenge is probably not how to identify the socially important areas but how to evaluate them and how to take them into account during the decision-making process when they are in conflict with other planning priorities, and especially when they cannot be given a monetary/market value. However, given that ocean literacy is an emerging concept which emphasises the influences and connections between society and the sea, aiming to build public awareness of ocean management, if non-monetary values are neglected in MSP processes, the public buy-in to the final marine spatial plan might be at risk.

Examples of methods to map and evaluate socially important areas through stakeholder participation (adapted from HELCOM/Pan Baltic Scope, 2019) include:

- Participatory mapping of socially important areas (drawing on a printed or digital map)
- Observation approaches to ascertain people's reactions and behaviour in socially important mapped areas
- Ask individuals to rank a list of socio-cultural values
- Ask individuals to rank seascape features by photo

In some places, it will also be important to identify and engage with indigenous coastal communities. They might already have delimited territories and a specific world view that accords a cultural meaning to the sea (Grimmel et al., 2019).

Another kind of social information aims to ensure that different social groups are properly recognised for the MSP (Saunders et al., 2020). Such information includes rights (including traditional tenure systems), dependencies on and interests in coastal and marine resources, belief systems and knowledge. Recognition is an important dimension of social justice in itself, but it also helps to ensure that all the relevant stakeholder groups are represented (see **Chapter 2**). It is also important to apply a rights-based approach and to address gender equality perspectives early in the MSP process. This basic information is useful for anticipating and verifying the distribution of benefits and harms generated by the MSP decisions.

Examples of data needs to assess existing sectoral conditions

List of spatial data related to maritime uses:

- **Fisheries**
  - **Fishery areas (e.g. commercial, traditional, recreational, etc.)**
  - **Spawning and nursery areas**
  - **Important fishery ports**
  - **Fish migration**
  - **Fishing density**
  - **Restrictions**
- **Aquaculture**
  - **Zones**
  - **Installed infrastructure**
- **Tourism**
  - **Recreation and tourism areas and routes**
- **Maritime transport**
  - **Port infrastructures and protection zones**
  - **Anchoring areas**
  - **Dredging and dumping areas**
  - **Maritime routes (IMO, ferry lines, etc.)**
  - **Maritime traffic (e.g. automatic identification systems, AIS)**
  - **Restricted areas reserved for shipping**
- **Installations and infrastructures:**
  - **Exploration and exploitation areas**
  - **Installed infrastructure (e.g. platforms, farms, stations, tunnels, bridges, buoys, etc.)**
  - **Safety zones and construction fields**
- **Submarine cable and pipeline routes:**
  - **Telecommunication/Data cables**
  - **High voltage cables**
  - **Pipelines**
- **Maritime and underwater cultural heritage**
  - **Exact or approximate location**
  - **Areas of protection with restrictions for other uses**
- **Raw material extraction areas**
  - **Mineral resources**
  - **Natural gas**
  - **Oil**
  - **CO_2 storage**
  - **Fracking**
  - **Safety perimeter of an extraction area**
  - **Areas where the extraction of raw materials is restricted**
- **Defence**
  - **Military exercise areas**
  - **Radar areas/military observation areas**
  - **Restricted areas**
- **Scientific research**
  - **Research areas**
  - **Measuring stations and networks**
- **Areas for conservation**
  - **Coastal and marine protected areas**
  - **Biosphere reserves**
  - **Bird migration routes**
  - **Other protection measures**

Box 5.6

Mapping marine activities and their legislative implication in Senegal, Mauritania, Guinea and Cape Verde

The PADDLE project was implemented from 2017 to 2021 to support knowledge exchange on MSP between academic and consultancies from Europe and partners in Senegal, Cape Verde and Brazil.

The PADDLE project mapped out the areas of competence of the stakeholders and the implication of the different coastal and marine legislation in the marine jurisdiction. This was a first step towards analysing existing conditions and spatial trends for fragmented sectors in the region to understand their stakes at sea.

Reports and meeting outputs are available in English and French on the project's website: https://www-iuem.univ-brest.fr/paddle

Source: Le Tixerant et al., 2020.

Box 5.7

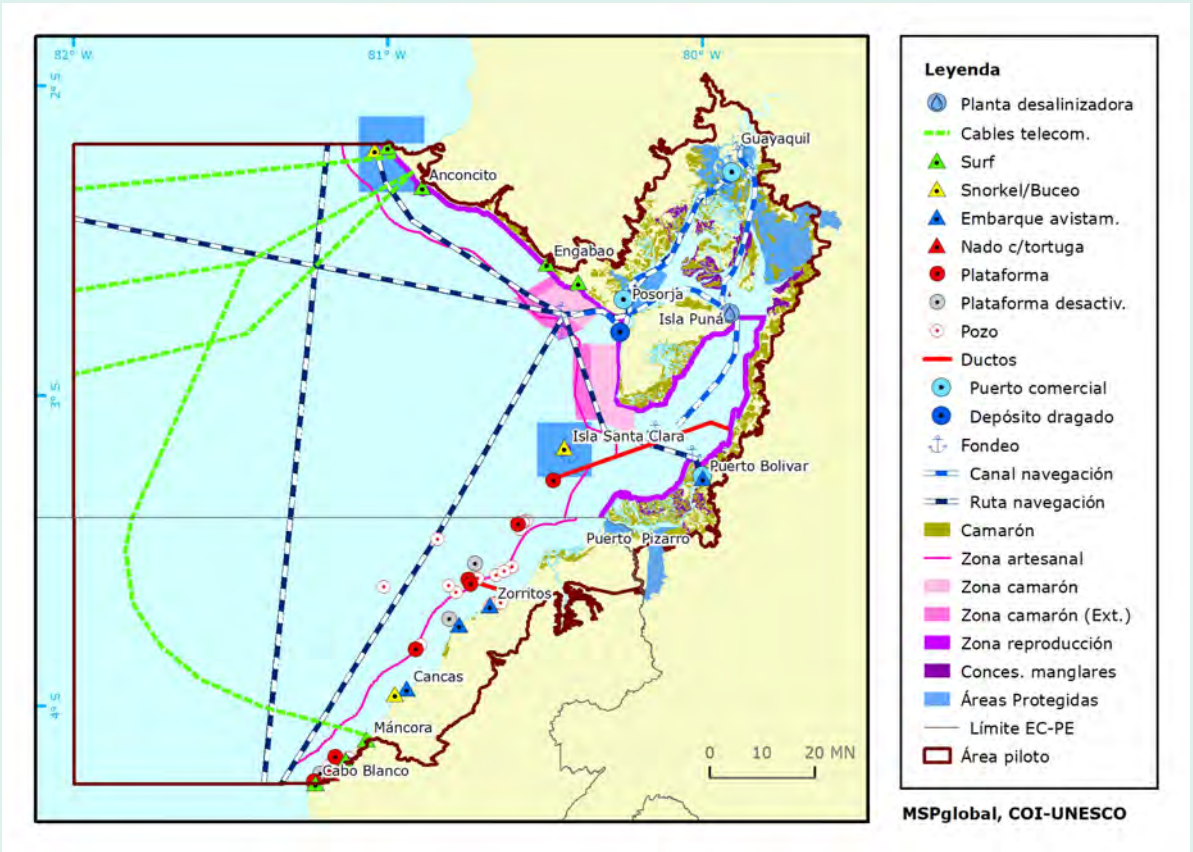
Transboundary assessment in the Gulf of Guayaquil (MSPglobal pilot in the South-East Pacific)

The MSPglobal Initiative developed a pilot project in the South-East Pacific region, with a specific cross-border cartographic exercise in the Gulf of Guayaquil, a historical bay shared by Ecuador and Peru. In partnership with several governmental bodies and stakeholders, the spatial data was compiled to map the current and future conditions of the maritime uses of the gulf.

In the absence of centralised national and binational spatial data infrastructures (SDIs) to access updated ecological, physical, socio-economical and other types of data needed, the following steps were agreed (UNESCO-IOC, 2021*g*):

1. List data to be compiled
2. Map potential data sources and providers
3. Compile data (download original datasets whenever possible or request to key stakeholders)
4. Analyse data quality
5. Build geodatabase with metadata
6. Develop maps
7. Stakeholders' consultations to review the maps

After mapping the existing conditions, an analysis of (in) compatibilities was conducted through the identification of high value areas for conservation; cumulative uses of the main maritime sectors and use-use and use-nature conflicts and synergies (paired analysis).



5.2.4 Identifying, understanding and analysing existing economic conditions from a multisectoral approach

Another important task is compiling information and mapping the spatial and temporal distribution and density of important human activities in the marine management area. Important human uses include both commercial and recreational fishing; marine transportation; renewable and non-renewable energy production; and sand and gravel mining, among others. Examples of human activities in marine areas are listed in **Table 2.4**.

When applying monetary valuation methods, some areas may prove to be economically more valuable than others, e.g. sand and gravel deposits; oil and gas deposits; areas of high-sustained winds; fishing grounds; and marine transport routes. These areas are important to identify and map and compare with the area's ecological and socio-cultural values.

The different coastal and maritime activities that make up the current ocean economy of a planning area have heterogeneous horizontal and vertical distribution influenced by the different variables described above (environmental, physical and social), as well as by other sectors. They can be mobile or fixed (see **Chapter 2**), but in both cases their footprints extend beyond the key area where the activity happens, since they are connected to the land (land-sea interaction).

The compilation of spatial data related to coastal and maritime uses is the cornerstone of MSP, the main feature that distinguishes this multisectoral approach from others dealing mainly with management measures. Therefore, data and information about each use (even those that are not within the scope of MSP according to national legislation) need to be compiled and analysed in order to provide a basis for developing an integrated economic assessment to support negotiations towards a final marine spatial plan. In some countries, for example, fisheries or defence are not under the MSP scope, but the understanding of the spatial and management implications of these activities is crucial to plan the other uses. Here, it is also important to highlight that those areas with a primary focus on conservation are also connected with local economic conditions as an important way to ensure sustainable development.

Trend analysis can also be a basis for identifying key drivers of future developments. The same drivers can inform the design of alternative future developments.

Inspired by the existing land cadastres, MSP has placed increased focus on the development of marine cadastres as decision-support tools where sectoral information can be found. Cadastres have the purposes of legally defining the space, the associated rights, interests, restrictions and responsibilities. However, there are some differences between land and marine cadastres, such as the third dimension of the marine environment and the legal regime of rights of use. Beyond the legal dimension, the marine cadastre provides essential information for planning, as well as having an governmental role as a tool for public consultation (UNESCO-IOC, 2021*c*).

Beyond spatial data, the different sectors need to be analysed with the aim of establishing a starting point for the plan. However, the statistical databases are not generally in the formats required by the analysis. National administrations are required to redesign their statistical bases to facilitate their application for the specific purposes of the marine spatial plans, taking into account the scale and the environment in which the activities take place and with an overall view of the maritime economy.

Box 5.8

Symphony – a tool for ecosystem-based MSP

Symphony is a tool and software with a scenario function to evaluate the expected performance of different planning alternatives (Hammar et al., 2020). The method provides a spatial overview and highlights the impact of major challenges in any given area, and supports the evaluation of alternatives.

Such a model allows a combined assessment of various management scenarios and their environmental impacts across the planning area. Outcomes of the model make it possible to work towards sustainable solutions to maximise the economic benefit gained from the use of marine resources with minimum damage to the environment. The aim of the economy model is to increase the capacity for knowledge-based management of marine resources and to account for their potential economic benefits. The aim of the cumulative impact model is to identify various human pressures and account for their cumulative effects on the natural environment, while considering regional differences of nature.

The cumulative impact is calculated with a spatial resolution of 1 km^2 for every area of the sea by summing up all the impacts of all environmental pressures on all ecosystem components.

The results are interpreted through heat maps, showing the cumulative environmental impact and by calculating the contribution of individual sectors or activities in any area. The results are used in planning and stakeholder engagement, and the calculations are made to compare different planning alternatives and to find solutions with minimal environmental impact.

Source: Swedish Agency for Marine and Water Management, 2021*b*.[1]

1 https://www.havochvatten.se/en/eu-and-international/marine-spatial-planning/symphony---a-tool-for-ecosystem-based-marine-spatial-planning.html

In order to analyse the current status of the marine sectors, and the extent to which the plans should contribute to building a new foundation for the maritime economy, the initial diagnosis should include the level of technology and innovation, and its role in the plan design.

In addition, blue economy analyses should pay attention to current distributional aspects: distribution of the benefits and harms, and dependence of communities/groups on marine resources/space.

5.2.5 Identifying current and potential conflicts and compatibilities among maritime uses, including cumulative impact assessment

After assessing the different aspects of the socio-ecological system, potential conflict areas in relation to competition for space (both use-use and use-nature) can be easily identified by overlapping spatial data. However, it is important to consider that if the current conditions are not completely mapped – and by paying attention to multiple criteria (e.g. ecological, economic and socio-cultural) – some conflict zones might be not identified.

Box 5.9

3D Planning through space-use profiles in the USA

A recent study published by the National Oceanic and Atmospheric Administration (NOAA) of USA (Wahle et al., 2020), based on the experiences of the Pacific Regional Ocean Uses Atlas Project (PROUA), described a tool to address the three-dimensional footprint of maritime activities though space-use profiles formulated by different stakeholders familiar with each specific use, such as scientists and engineers working in the industry.

The **space-use profiles** are categorised as follows: I–IV relating to operational characteristics and V–VI relating to spatial constraints in interactions with other uses.

I. **General description:**
Type of activities performed; ocean and coastal realm typically used, including temporary transit track of boats or planes; fixed and mobile functional components; and any other aspects related to the scope of the use.

II. **Three-dimensional space use:**
Footprint at horizontal (shoreline; intertidal; nearshore; coastal; oceanic) and vertical dimensions (air; sea surface; water column; seafloor; seabed).

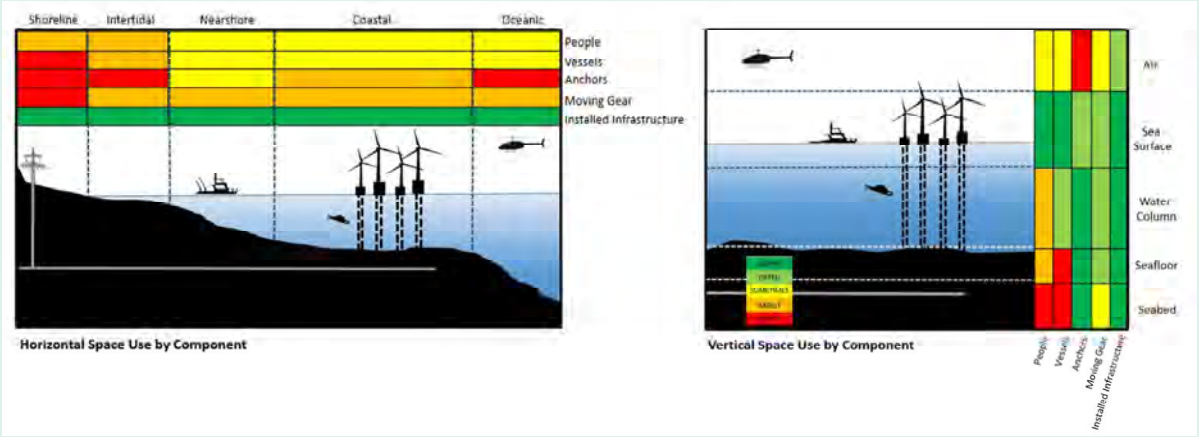
III. **Space occupied by the use's functional components:**
Location of the different components of the maritime use (e.g. people; vessels; anchors; moving gears; installed infrastructure) at horizontal and vertical dimensions.

IV. **Importance of the use's functional components:**
The relevance of each component to perform the activities of the maritime use, i.e. division into most likely and rarely employed components.

V. **Operational characteristics of the use:**
How a use's operational characteristics can create conflicts through either exclusion zones (permanent or temporary; including buffer zones), or interference with the success (including safety) of another use.

VI. **Spatial constraints:**
The degree of flexibility to select operating areas, i.e. site-dependence, in order to avoid conflict with other uses, as well as the degree to which the use's operating area is regulated by a governmental institution that determines where, how and when it may operate.

The study emphasised that despite the replicability of the framework, the inputs are context-specific because operational characteristics of maritime uses can diverge across geographies, seasons and cultures.



To overcome this challenge in places with limited data, a potential solution is to ask stakeholders to identify areas with spatial conflicts directly on a map. To introduce the discussion, before proposing a participatory mapping, an exercise to identify paired interactions (both conflict and synergies) might be useful. However, for MSP, it will be important to distinguish spatial from management conflicts, which would probably be tackled by other policies.

Awareness about the need to use cumulative impact tools and assessments in MSP is growing. It is still difficult to find examples used in marine spatial plans, but a series of methods has already been used on some national, as well as pilot, MSP projects.

In general, these methods identify the pressures caused by the activities, linking them to specific ecosystem components, such as benthic habitats and marine species (SIMNORAT, 2019). Furthermore, some threats have direct effects on ecosystem components, e.g. with fishing over-harvest or damage to habitat caused by bottom trawling or anchors from recreational boats, while others have more indirect consequences, e.g. introduced species that compete with or prey on native species. These indirect effects in particular make the detection and assessment of interactions more complex than simple cause-and-effect mechanisms.

Moreover, MSP has the challenge of dealing with a complex, boundless and fluid 3D environment. While some uses cover the whole water column and sea surface (e.g. fixed oil and gas platforms), others mainly occupy the sea surface (e.g. nautical tourism) or the seafloor (e.g. shipwrecks). Here, it must not be forgotten that most of the floating activities are moored, such as aquaculture cages. Indeed, some uses occupy a limited small space while their zone of influence can be much wider (e.g. underwater noise from boats or seascape modification from offshore wind parks).

Taking into account the third dimension (i.e. depth) is especially relevant in deep areas; however, 3D multisectoral planning is not a reality for most marine spatial plans yet. Considering that MSP is an adaptive process with increased inclusion of new knowledge, it is expected that the second or third generations of plans will be able to address three-dimensional aspects in complementary analyses of spatial uses and conflicts, as well as in zoning schemes.

5.3 Identifying future conditions

For any marine management area, there will always be various possible alternative futures. Depending on the importance you give to certain goals and objectives, each of these alternatives will have human uses distributed differently in space and time. Developing alternative spatial scenarios is a crucial step in the MSP process because it sets the stage for choosing the direction in which you want your area to develop for the selected time frame. There are various ways in which spatial sea-use scenarios can be developed.

MSP is a future-oriented activity that develops a plan for a future vision. An MSP process will engage with stakeholders to envision, define and create a desirable future scenario and enable proactive decision-making in the short run to move towards what is desired. Consequently, planning should not be limited to defining and analysing existing conditions and maintaining the status quo, but should reveal possible alternative future scenarios for the area in another 5, 10, 15 or even 20 years.

The purpose of this assessment is therefore to examine different potential future conditions of the marine area by answering a simple question: 'Where do we want to be?' The answer to this question involves a number of tasks, including estimating the demand for future and new marine uses, defining alternative future spatial scenarios and selecting a preferred spatial scenario (IOC-UNESCO, 2009). A scenario is a coherent, internally consistent and plausible description of a possible future state of the world (IPCC, 2001). It is not a forecast or a plan; rather, each scenario is one alternative image of how the future can unfold (McGowan et al., 2019). The key task here is to focus on how to translate the information on future demands and options into spatial visions and trends.

Any analysis of future conditions should also take into consideration possible effects of climate change. The challenge here is that even the longest reasonable planning horizons used in MSP scenario work are 5 to 10 years, while climate scenarios are typically 50 to 100 years. That is far too long as a planning horizon, therefore the engagement and discussion with stakeholders about future trends should be used to raise awareness about climate change.

5.3.1 Estimating new demands of ocean space from established, new and emerging maritime sectors

Evidence and data gathering related to MSP and the identification of issues emerging from that evidence is an important step that can include research and consultation to ensure the marine spatial plan is addressing the most appropriate matters.

In this context, the first stage in analysing future conditions is estimating and anticipating new spatial demands within the planning area and selected time frame. In most cases, information about future proposals is indicated in sectoral policies and reports, although there are cases where sectoral plans are not available. Experience has shown that there are usually various gaps relating to future demands. In these cases, MSP can play the role of stimulating some sectors.

Box 5.10

Developing future scenarios in Belize for integrated coastal zone management

In Central America, the vision for the Belize Integrated Coastal Zone Management Plan (CZMAI)[1] and the Natural Capital Project[2] gathered existing data about biodiversity, habitats and marine and coastal uses that was comprehensively mapped and shared with the public for review and feedback.

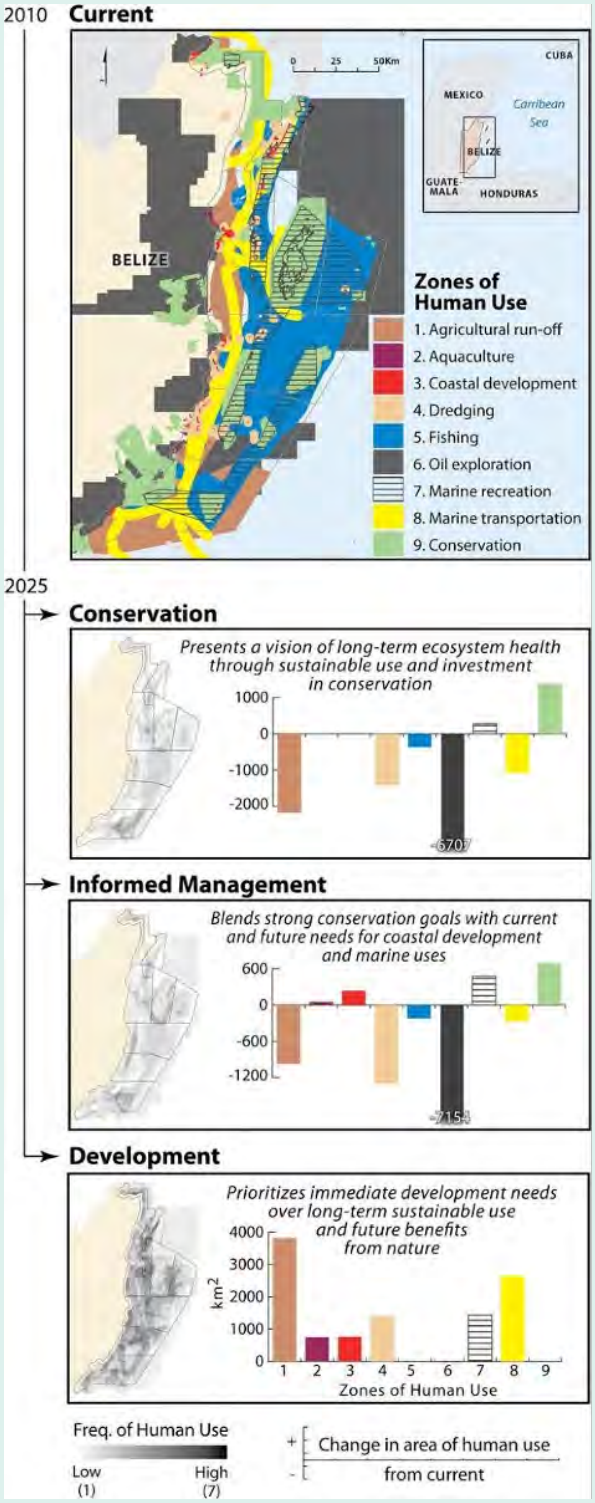
CZMAI grouped marine and coastal uses into useful zoning categories and developed three possible zoning schemes at the local and countrywide scales. The three zoning schemes emphasise different priorities of stakeholders: conservation, development and informed management. In order to understand the implications of each zoning scenario, CZMAI used InVEST to model several ecosystem services and to create final zoning schemes.

InVEST results indicated for Belize that in a 'development' future, the risk of habitat degradation would increase, and the delivery of ecosystem services would decrease. A 'conservation' future would improve the health of ecosystems but would reduce human use of the coastal zone. An 'informed management' future embraces a combination of development and conservation priorities, and would minimise impacts on coastal and marine ecosystems. CZMAI endorses the 'informed management' scenario, as it represents the most sustainable future for Belize's coastal zone.

An extensive engagement process was used to design the national spatial plan and develop scenarios. The preferred scenario increased coastal protection by at least 25% and 'more than doubled the revenue from fisheries'.

An ecosystem services approach directly informs the final zoning design and demonstrates that incorporating these services into MSP is possible.

Source: Coastal Zone Management Authority and Institute, 2021.



1 https://www.coastalzonebelize.org/coastal-planning-monitoring-program-unit/
2 https://naturalcapitalproject.stanford.edu/software/invest

Box 5.11

Analysing future conditions at the transboundary level

In the analysis of future conditions – and depending on the relative location of each State – it may be necessary to incorporate prospective considerations of adjacent and/or opposing States as well as the maritime activities carried out by third States and corporations in other EEZs, the high seas and the area.

According to IOC-UNESCO (2009): 'A marine space use scenario allows us to project a perspective of the future use of marine space based on a set of goals, objectives and assumptions about the future'. Therefore, for the construction of the three scenarios for the MSPglobal pilot project in the Western Mediterranean, specific assumptions, goals and objectives were identified for each scenario regarding maritime sectors, maritime policies and environmental values. These 'key drivers' characterise each scenario and are presented in the following table, along with their proposed visions.

An integrated scenario assumes that recommendations from the Blue Economy policy paper from Plan Bleu[1] on sustainability, exploitation of synergies between sectors and cooperation are followed, allowing a regional development of a sustainable blue economy.

Therefore, the main objective of this scenario is to reduce conflicts between uses on the one hand and between uses and the environment on the other, and to promote synergies allowing co-location, for instance between aquaculture and wind energy.

This scenario represents the development of the region if marine integrated management was set at transboundary level considering that MSP is developed in each country and that it is coherent along the sea basin, following sustainable goals. For this reason, its key drivers are sustainable tourism, sustainable maritime transport, co-location of activities and the precautionary principle.

Table 5.2
Proposed visions of each scenario for the Western Mediterranean

Scenarios to 2030	Key drivers
Trend	
Assuming that no integrated maritime policy was in place, sectors grew based on their past trends and future projections. Conflicts are expected to arise in the busiest areas	• Mass tourism • Cargo and cruises • Intensification of fishing
Conservationist	
Conservation is the priority, ecological and biological areas are effectively protected, most impacting activities are reduced until the maximum possible extent and new activities development is based on ecological sustainability factors	• Eco-tourism • 'Green shipping' • Sustainable fisheries and aquaculture • Effective protection of key environmental values • Promotion of renewable energy
Integrated	
Integrated planning and management have led to the application of sustainable Blue Economy strategies at regional level where co-location of activities is a priority led by social and sustainability objectives	• Sustainable tourism • Sustainable maritime shipping • Co-location of activities • Precautionary principle for emerging sectors

Source: UNESCO-IOC, 2021*h*.

Table 5.3
Sectors assumptions in the integrated scenario

	Status of the sectors in the integrated scenario
Fisheries	Most studies show that fisheries production is decreasing or stagnant in the Western Mediterranean due to overexploitation of stocks. In an integrated scenario, fisheries are sustainable and synergies with tourism are exploited. High impacting fisheries would be gradually removed, maintaining only sustainable fisheries.
Aquaculture	Many studies agree on the growth of aquaculture in the coming years. In an integrated scenario, aquaculture will be developed in suitable places regarding technical and ecological limitations as well as far from touristic areas in order to avoid landscape disturbance. Co-location will be a priority when possible.

1 https://planbleu.org/en/

	Status of the sectors in the integrated scenario
Oil and gas	Development of oil and gas activities would be mostly influenced by prices. In an integrated scenario, this development will be moderated, focused mostly in the existing Italian exploitation in the Adriatic and the exploration areas of non-EU countries. For EU countries, European and national policies regarding decarbonisation (i.e. European Green Deal) justify the lack of development of new activities in this sector.
Maritime transport and ports	Maritime transport is very important in the region. In an integrated scenario, maritime transport will be managed to reduce its impacts to the minimum. In this scenario, the IMO concept of Sustainable Maritime Shipping is promoted and Motorways of the Sea (MoS) are rerouted in order to avoid areas of high concentration of cetaceans.
Wind energy	Wind energy has experienced very limited development in the Western Mediterranean to date mostly due to technical limitations. In an integrated scenario, floating wind turbines will be established in suitable places regarding ecological limitations and taking into account co-location priorities. They will also be located far from touristic coastal areas in order to avoid landscape disturbance.
Cruises	The Mediterranean is critical at the global level for cruises. In an integrated scenario, this activity will be managed and limited according to sustainability criteria.
Coastal tourism	The Mediterranean is the world's leading tourist destination, as such it is considered an essential activity in the region. In an integrated scenario, this activity will be managed and limited according to sustainability criteria (promotion of sustainable tourism).
Conservation	The Western Mediterranean is home to important habitats and species which also suffer from high pressures. In an integrated scenario, sustainability is a horizontal topic for all sectors, established MPAs are effectively implemented and particular areas with environmental values threatened by maritime transport are also protected by Particularly Sensitive Sea Areas (PSSAs).
Deep-sea mining	Deep-sea mining is in its infancy but there is potential in the Mediterranean with some deposits already identified. In an integrated scenario, this activity is developed following a strict precautionary principle.

Source: UNESCO-IOC, 2021*h*.

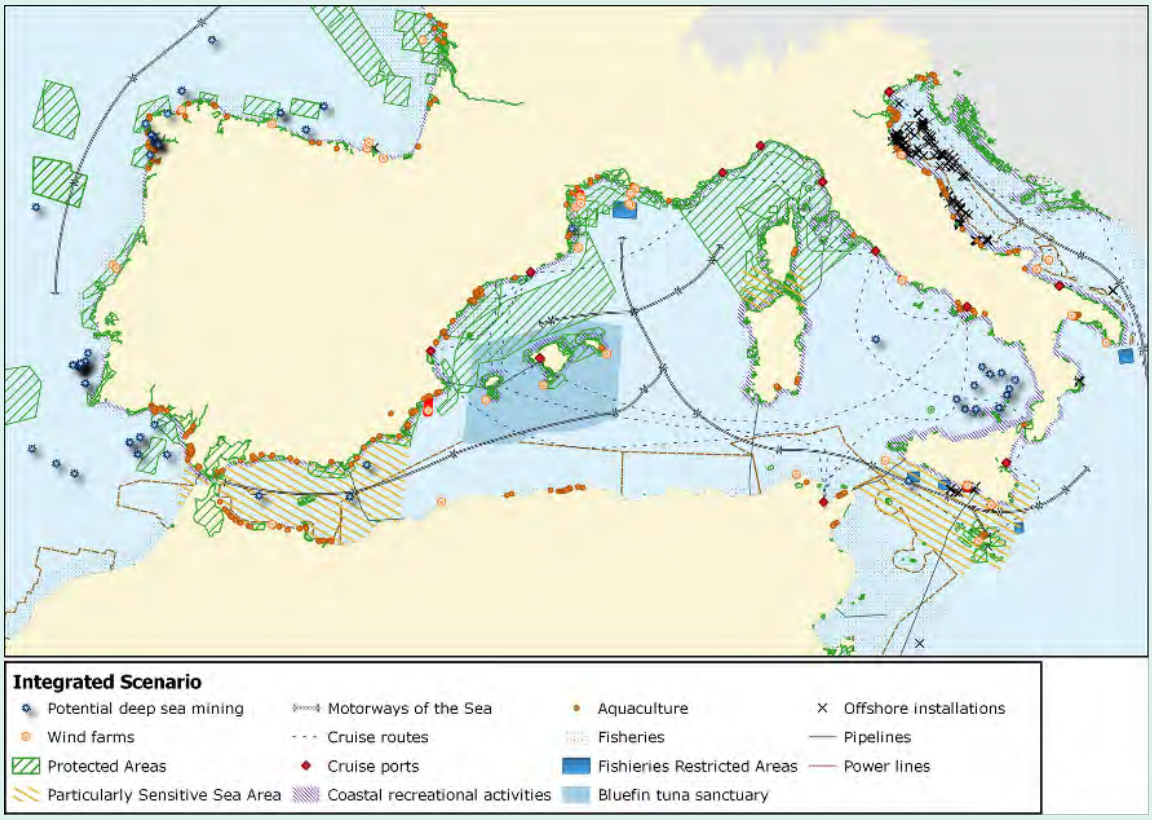


Figure 5.7
Integrated scenario for the Western Mediterranean

Source: UNESCO-IOC, 2021*h*.

Box 5.12

Mapping suitable areas for spatial development

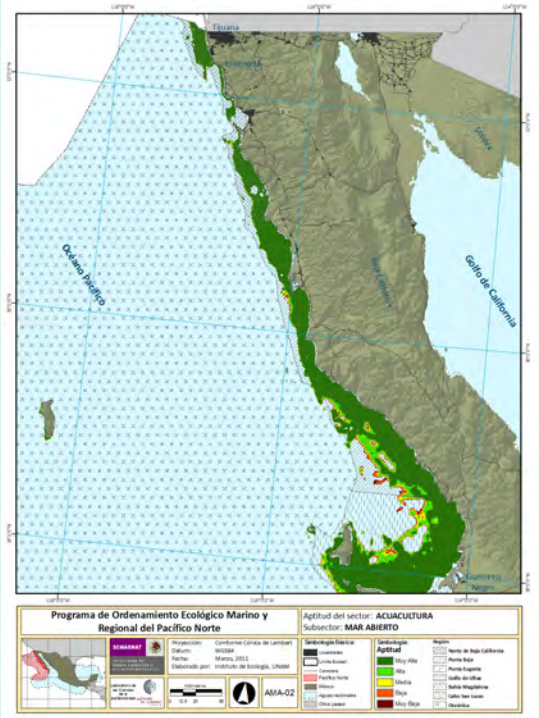
In the diagnosis phase of Mexican MSP processes, suitability maps are developed to identify areas with the best conditions for each sector (including conservation).

A multi-criteria modelling analysis is carried out according to the steps below (LANCIS UNAM, 2020):

(1) Identify the objective of the sector regarding the use of the territory
(2) Identify the attributes that the sector requires to develop its activities
(3) Identify the relative importance of the attributes
(4) Transform attributes to an equivalent scale
(5) Integrate the suitability map into the geographic information system
(6) Validate the suitability map

The results mean that areas of higher value have the best conditions for the development of the activity, while areas of less value will require some kind of technology to compensate for the lack of ideal conditions, which will create additional costs for the sector.

The North Pacific planning process developed suitability maps for aquaculture, fisheries, maritime transport and infrastructures, tourism and conservation. The combination of these sectoral suitability maps resulted in a first draft zoning for the region. The different zones identified are units with specific characteristics that are suitable for a group of sectors (SEMARNAT, 2019).



© SEMARNAT & LANCIS-UNAM, 2019.
Source: LANCIS-UNAM, 2020.

In addition, new spatial demands, especially for emerging sectors, depend on the availability of investment, while new technologies might extend the suitable areas for a certain activity (IOC-UNESCO, 2009).

Something that has become a 'trend' in most projects and national plans is developing sectoral notes, fiches or chapters. These kinds of documents give an overview of future uses of the sea and the evolution of different maritime sectors, current spatial needs and the anticipated future developments of the sectors, and – most importantly – key issues for MSP.

In addition to the existing development proposals, analyses are relevant to identify where the suitable areas to develop each sector are located. After identifying these areas, an engagement activity could be organised to prioritise them.

This step is critical to analyse and map how future uses and interests can conflict, be in competition or in synergy with other uses. At this stage, it is important to consider multi-use of the sea space (see **Chapter 2**) to minimise conflicts and promote common opportunities for multiple sectors. Indeed, a series of actions are still required to advance potential multi-uses (**Table 5.4**) around the world, such as the development

Table 5.4
Examples of potential multi-uses and promotional action

Type	Description
Tourism and fisheries	Tourism service provided by small-scale fishers on a working vessel to discover fishing traditions
Tourism and aquaculture	Tourism service to visit aquaculture facilities (may include snorkelling in proximity or even within the installation)
Offshore wind farm and tourism	Tourism service to visit offshore wind farms
Offshore wind farm and aquaculture	Co-location of aquaculture installations directly attached to the offshore wind infrastructure or within the security zone of the offshore wind farm
Offshore wind farm and fisheries	Fisheries allowed within the offshore wind farm
Offshore wind farm and conservation	Nature-inclusive design for offshore wind infrastructure

Sources: MUSES Project, 2018; W+B and WMR, 2020.

of regulations and guidelines, as well as more pilot projects to analyse multi-use feasibility and to better understand the economic, social and environmental benefits and impacts (MUSES Project, 2018).

5.3.2 Identifying potential areas for biodiversity conservation

MSP processes might include the design of MPA networks or the establishment of new marine protections. MSP provides a transparent, participatory approach for conservation and other objectives, including meeting conservation or environmental goals or targets associated with international conventions and agreements like the Convention on Biological Diversity. If marine protections are not one of the objectives for the plan, areas with a high-nature value should be identified and considered during scenario development for uses and activities in order to avoid incompatible activities in these areas, as well as to indicate potential areas for future conservation.

Criteria to help define 'decision rules' for the development of spatial scenarios

International and national regulations: Decision rules can be derived from reviewing international and national regulations and policies that influence space allocation in the area and which are not readily changeable (e.g. changes in shipping routes and traffic separation schemes need to beapproved by the International Maritime Organization).

Economic and technical considerations: Decision rules can also be derived from economic or technical requirements to make a particular activity operational (e.g. offshore wind energy and aquaculture is likely to be more economically viable when placed closer to shore and/or in shallow waters).

Physical and environmental conditions: Decision rules can also be derived from physical and environmental conditions. Most extracting activities are dependent on the availability and quality of the resources (e.g. functioning of certain infrastructure could be impaired by physical conditions, such as bathymetry, sediment type and currents).

Social considerations: Decision rules can also be derived from social preferences for the allocation of space to certain human uses (e.g. prohibiting the installation of certain infrastructure close to the shoreline in order to preserve the seascape).

Conservation considerations: Decision rules can also be derived from conservation requests (e.g. do not allow certain activities within areas of cetacean reproduction during certain times of the year).

Source: Adapted from IOC-UNESCO, 2009.

Box 5.13

Defining possible multiple uses for the ocean

In the realm of marine resource utilisation, 'multi-use' should be understood as the intentional joint resource use by two or more users. It is an umbrella term that covers a multitude of combinations wherein different users operate side by side and share the same resource.

The definition of multi-activity lays down rules which make it difficult to support multi-activity: it involves finding a balance between freedom of activity, the safety of each individual, and civil and environmental liability.

In Denmark, passive fishing is allowed in the Horn Rev 1 and 2 wind farms and troll fishing is allowed within a 200 m buffer zone of the connection cables.

The Horn Rev 3 wind farm has been defined with fishers to try to limit the impact of the wind farm on the different fisheries.

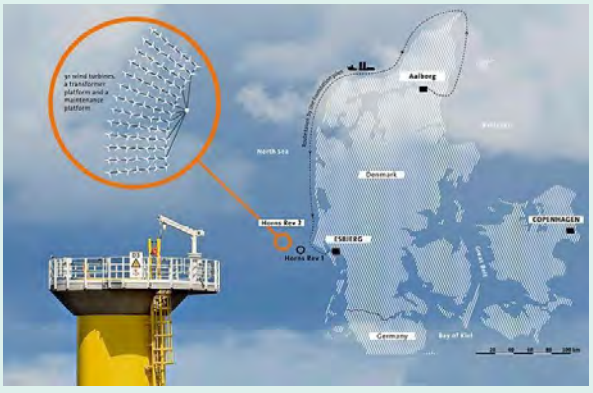


Figure 5.8
Geographical location of Horn Rev 1 and 2

© Bilfinger Berger Magazine, 2014
Sources: EU MSP Platform, 2021*a*; Ruyssen, 2020; Energinet.dk, 2014.

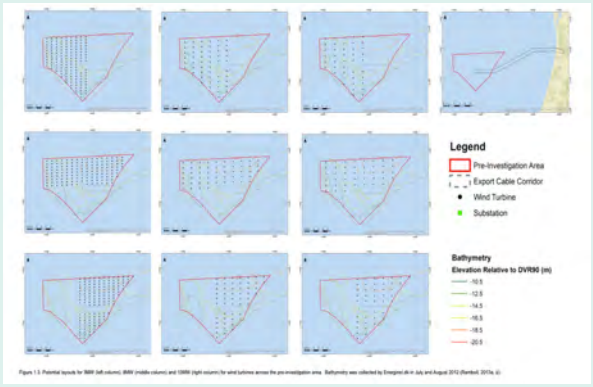


Figure 5.9
Location of Horn Rev 3

© Energinet.dk, 2014.

5.3.3 Defining possible alternative scenarios for the planning area

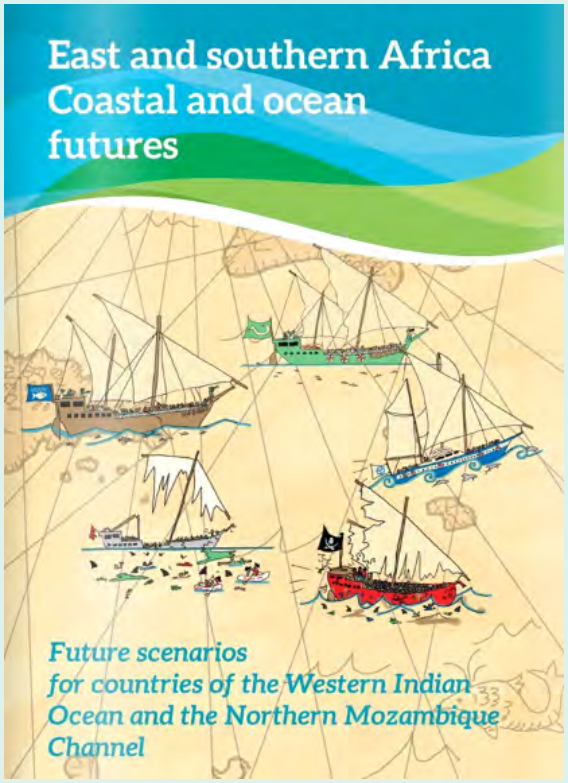
After analysing the current and potential future conditions of the different uses, it is time to develop alternative scenarios for the planning area. Each scenario is built according to different visions and priority objectives, which will result in maritime activities and conservation areas distributed differently in space and time in relation to location, connection and size of the designated areas (IOC-UNESCO, 2009).

Scenarios can be exploratory ('what can be done?'), normative ('what must be done to achieve a desired future?') or predictive ('what is the most likely situation?') (Frazão Santos et al, 2020). Usually, they are a combination of reality, trends and expectations.

Although the pioneering plans have aimed to introduce maritime activities based on innovation and knowledge, disregarding the more established uses, these activities still need to be regulated in many States and ordered as essential activities. It is important to avoid identifying the

Box 5.14

Transformative scenario planning (TSP)/SDG scenarios in the Western Indian Ocean



Transformative scenario planning (TSP) is an approach that brings concerned stakeholders from different, often competing, perspectives together around pressing sets of problems to build narratives that illustrate a range of potential futures. What makes TSP different from other scenario approaches is discussion about how to create and deliver the desired future outcome by involving diverse actors.

The TSP method applied in the Western Indian Ocean (WIO) is based on bringing influential and thought leaders together through multiple facilitated discussions. Stakeholders then identified uncertainties that will define the future outcomes of ocean governance: quality of governance (good vs poor, integration vs fragmentation), and wealth and degree of investment in a country (high vs low, from international and domestic sources). They also identified drivers and key theme areas that will be affected and woven into the narratives, including climate change, governance, ecosystems, social and welfare, SDG future and other factors. The main output of the approach is identifying the key forces around which to construct three to four plausible stories about the future of countries in the WIO. In this case, the stories use the metaphor of countries as ships and their related conditions on the sea. This includes the following scenarios:

Slow but sure: In this country, there is little investment but a good governance framework. There is little wind and the progress of the ship is slow but the crew are good and able to make the most of the situation.

Riding the wave: This country is blessed with rich resources and a governance framework to deal with challenges. The wind is strong and steady, powering the ship forward while the skilled captain and crew expertly steer them through the challenges.

Pirate ship: In this country, there is abundant wealth but a poor governance framework. The turbulent wind and waves makes the captain act like a pirate, caring little for the passengers.

All pain, no gain: This country is poor and poorly governed. With no resources and leadership, it wallows without progressing and all on board are dispirited. This approach has some relevance for transboundary MSP by:

- Developing visions for managing shared ocean resources by identifying the plausible future of the countries
- Kick-starting discussions about MSP. The scenarios will be used to start bilateral discussions and dialogues between countries on cross-border MSP.
- Obtaining commitments for achieving high-level goals and SDGs at national and regional level.
- Building trust among cross-border stakeholders to support and guide decision-making, and reaching a consensus on a desired future, especially when there are competing national and regional interests and sectors.

Source: Obura et al., 2018.

plan mainly with innovative activities, encouraging the dismantling of traditional structures when these support a considerable section of the local communities: the plan should not be an instrument of 'ocean grabbing' (Bennett et al., 2015).

On the other hand, marine spatial plans are sometimes criticised for only presenting the status quo, i.e. the existing sectoral interests are protected so strongly that the transformative potential of MSP is not realised. Scenarios to support the MSP process are very much about sectors. Some examples of scenarios are rather broad or start from broad scenarios and analyse how maritime sectors would evolve in the future. Scenario analysis can and should be broader than the focus of the actual plan, with possible future developments being included in the planning context.

When developing the scenarios, the following can also be taken into consideration:

- Climate change scenarios
- Global maritime trends
- Other social, economic and political scenarios developed for the planning area and region (described in other policies that are not necessarily connected to maritime activities)

Specific scientific knowledge about climate change scenarios for the planning area is needed, although it is not always available. Since there are still uncertainties about detailed climate change consequences, MSP processes need to have the flexibility to introduce the necessary adaptations to tackle this global issue according to its evolution (see **Chapter 8**).

5.3.4 Selecting the preferred spatial scenario

Scenarios are not future predictions, but part of a forward-looking approach involving differing levels of uncertainty, which increases when related to the longer-term future (EEA, 2007). Uncertainties and associated risks need to be addressed and clearly communicated to stakeholders.

Examples of questions to analyse the alternative scenarios

- What are the consequences of each alternative scenario for the different maritime sectors?
- Which steps would lead to each alternative scenario?
- Which are the most intensive and potential areas of future development?
- What kind of spatial impact would the alternative scenarios have?
- What are the possibilities and potential areas for multi-use platforms and synergies?
- How may a sustainable future be reached?
- What is the preferred scenario?
- What is the worst-case scenario? What leads to the worst-case scenario?

Source: Adapted from Plan4Blue, 2018.

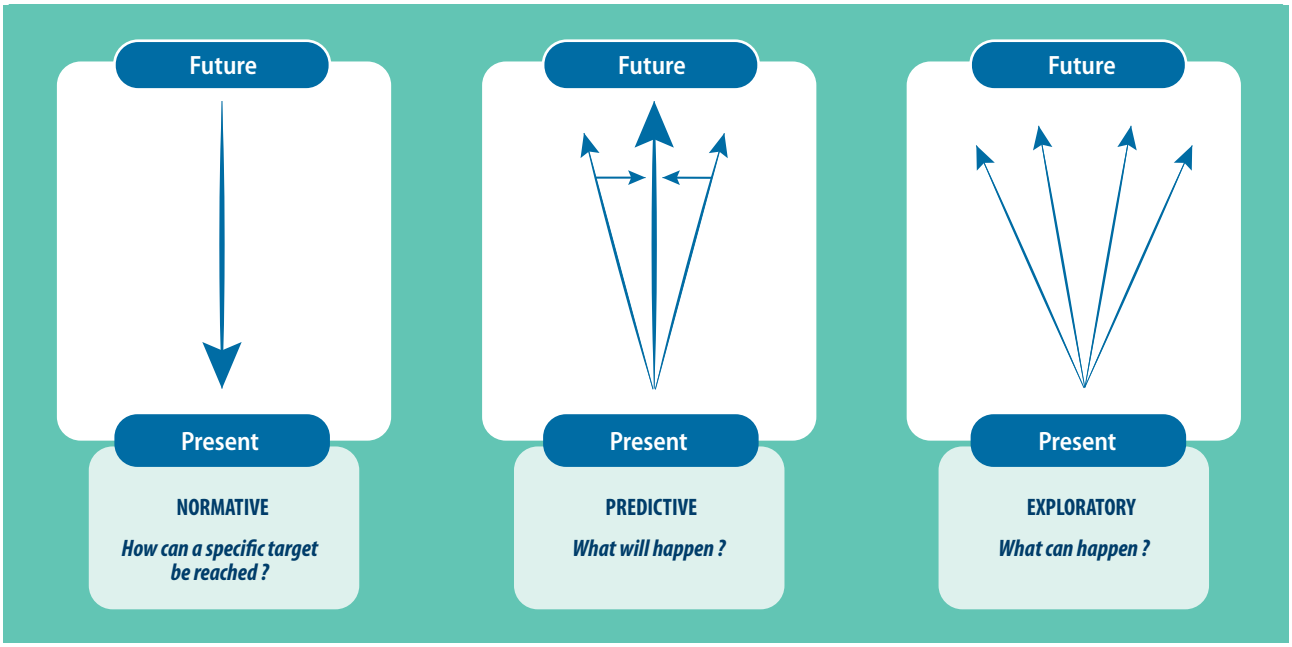


Figure 5.10
Types of scenarios

Source: Zurek and Henrichs, 2007.

There is an increasing need for using scenarios to i) understand the aspirations of different stakeholders towards integration within the MSP process and the realities of encouraging co-location between sea uses and ii) highlight important issues where further transboundary cooperation on MSP may be required (McGowan et al., 2019).

Any scenario will represent gains and losses for specific stakeholders. When selecting the preferred scenario, a SWOT analysis (strengths, weaknesses, opportunities and threats) and trade-off analysis can support the decision. When evaluating the alternative scenarios with the actors, the key drivers and the 'big picture' for each scenario need to be at the core of the dialogue.

5.4 Developing a public information system

The amount of data and information necessary for developing a knowledge-based marine spatial plan can be substantial. Therefore, it is advisable to organise and document everything in an information system that is also available for public engagement. Through such a tool, stakeholders and citizens can consult general information and products of the MSP process. In the case of an interactive tool that allows analyses and the establishment of communication channels, they can also provide inputs to improve the process. **Table 5.5** shows different formats of public information systems that can be developed to support the MSP process.

Table 5.5
Types of public information system

Type	Description
Data catalogue	A data list, its availability and how to source
Database or data portal	Online direct access to datasets
Data viewer or GIS mapping tool	Service to display spatial data
Knowledge platform or information service	Service which aggregates data into information product (e.g. factsheets)
Decision support tool or assessment tool	Method or specialised tool to support further analysis and interpretation

Source: Adapted from European Commission, 2017.

6 The plan

THIS CHAPTER DESCRIBES

- **The marine spatial plan and related documents**
- **Management actions and spatial allocation of uses**
- **The development of all stages of the spatial plan**
- **Capacity development in MSP**

This chapter is about the production or development of the marine spatial plan. This is an iterative process consisting of impact assessment of the draft plans and consultations with sectoral administrations and affected parties – and with neighbouring countries when relevant.

6.1 The marine spatial plan

The marine spatial plan is a policy instrument that represents the agreed objectives and preferred scenario for future sectoral developments and priority areas for conservation in the planning area.

In terms of principles of engagement and description of how to get involved, these would normally be published at the start of the MSP process in a document such as a statement of public participation. The planning background is also relevant in order to understand the role of MSP for a country or territory, what it will entail, and the benefits of marine planning for society.

The final plan may describe the engagement during the process and how stakeholders might be engaged in implementation, monitoring and review.

As already stated in previous chapters, MSP will enable the competent authorities to set a clear framework to manage the ocean with regard to national objectives and priorities, and will support a more efficient and strategic decision-making with respect to the availability and use of marine resources.

The area to be covered by the marine spatial plan should be specified; the extension of this area may vary depending on the planning needs, the terms of actions to be considered and the issues to be addressed (see **Chapter 5**).

In some countries, the planning area may cover a defined national maritime jurisdiction (e.g. Ireland, Seychelles); in other countries, the marine spatial plan may affect only certain areas or regions (e.g. Norway, Israel) and, depending on the institutional organisation of a country and the distribution of competences amongst regions or entities, a specific marine spatial plan could be developed for each national entity (e.g. Germany, Indonesia, USA).

In all cases, the planning area will be considered as the reporting area for the marine plans, monitoring and evaluation. The plan will be clearly integrated into the national planning legal framework, which will facilitate the sharing of responsibilities among national institutions, institutions with administrative competence for planning from local to national scale, and those in charge of interaction with all sectors and citizens affected.

The documents supporting the marine planning process should include the stages of preparation, including the consultations that will help the production and later implementation of the plan. It should also cover how the stakeholders' and citizens' views and comments will be used to review and revise the plan. These stakeholders should also be informed about all the implications of the approved plan in relation to consents, permissions, licences and enforcement.

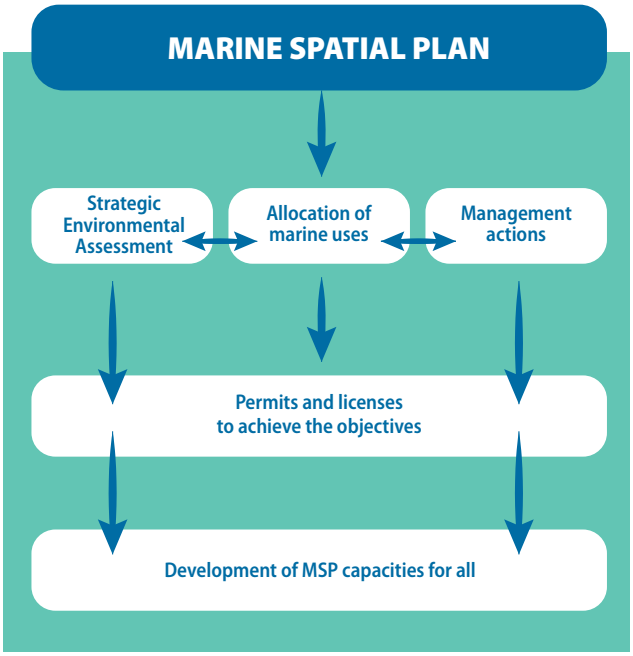


Figure 6.1
Implications of a marine spatial plan

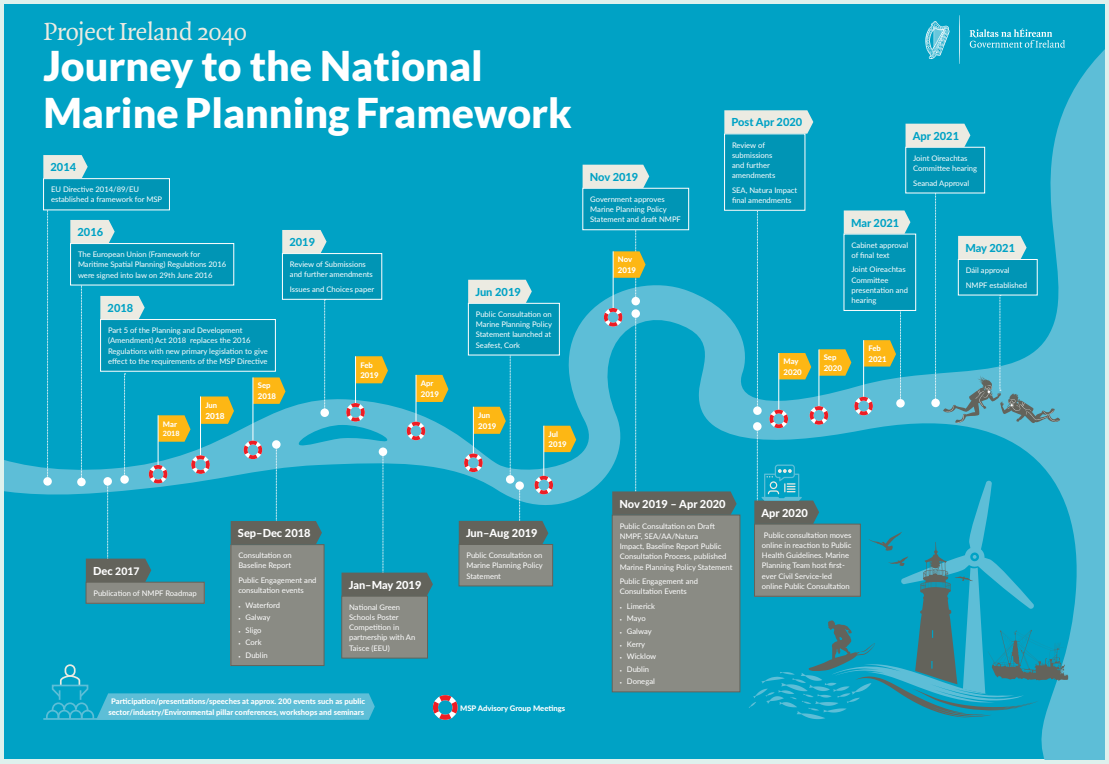
Box 6.1

Benefits for marine users in Ireland

Marine users, including regulators, applicants for consent and interested persons, should find that the system will reduce the regulatory burden on them by giving them more certainty regarding where activities could best take place and thereby speed up the licensing process.

Marine users should also feel more confident that decisions made on applications for projects will be robust in the face of challenge, provided they are made in accordance with the policy framework set out in the marine spatial plan.

This is because the plan will be based on the best available technical and scientific evidence, including early and consistent engagement with stakeholders together with a sustainability appraisal.[1]



Source: Department of Housing, Local Government and Heritage of Ireland, 2021.

1 https://www.gov.ie/en/publication/a4a9a-national-marine-planning-framework/#nmpf-roadmap

6.2 Management actions, including their economic impact on those measures linked with sustainable blue economy strategies

Management actions are related to specific objectives in any given marine spatial plan. A spatial (and temporal) management action is a means of delivering desired goods and services – specified through goals and objectives – from a marine management area. It specifies how, where and when human activities should occur (IOC-UNESCO, 2009). Spatial management actions only influence the spatial (and/or temporal) distribution of human activities.

Other types of management actions should also be used in the management of human activities, for example: i) actions that specify inputs to human activities, ii) actions specifying the nature of the production process or output of human activities in a planning area or iii) spatio-temporal actions determining where and when activities may occur.

In France, the expansion of Port-La-Nouvelle to accommodate larger vessels required very specific actions. The port is located opposite a macro-zone with commercial offshore wind potential and this new development has required the port to adapt to the wind sector.

The extension of the south breakwater by 600 m, the creation of a 2,430 m breakwater and dredging of 3.5 ha could potentially disturb the bentho-demersal community, with nearby spawning and nursery areas, and damage the nacre (mother of pearl population) (Sangare et al., 2020).

The extension was accepted with the proviso that other actions were implemented, such as the transplantation of the great nacre populations in the Ayrolle pond, the creation of a research programme on large nacres and strengthening of the protection zone on sandy beds with monitoring and dedicated management actions (Ministère de la Mer de la France, 2020).

The first spatial agenda for the North Sea in the Netherlands[1] led to a specific list of recommendations and actions for exploration, research and transboundary cooperation. The agenda does not provide for how recommendations and actions should be implemented, since that will depend on opportunities that may arise until 2050.

There is a general and strong commitment to integrated area development at sea and along the coast, stating opportunities for multiple use in advance and stimulating practices to develop joint use of the development space. This is a recommendation that could be translated into specific policy or regulations to be developed in cooperation with the private sector, and could be based on the spatial agenda.

The agenda aims to encourage sea uses in ways that make it cleaner and more healthy (for example by cultivating seaweed) or that help it to spring back more rapidly after use (for example, the way in which sand extraction areas are left) (Ministry of Infrastructure and Environment of the Netherlands, 2014).

It also promotes energy transition at sea by stimulating the market for tidal and wave energy dedicated to generating energy from low current speeds and limited wave heights and tidal range, or by the creation of working islands for wind energy and opportunities for deep geothermal energy, including decommissioning, enhanced oil recovery and CO_2 storage.

It is also worth mentioning, among many other recommendations and proposed actions, those related to the multiple use of space at sea, in which combined functions can offer added value, e.g. by assigning space to safe and smooth shipping, fishing and leisure with a view to giving the ecosystem space for recovery in the most important ecological areas.

The National Water Plan 2016-2021[2] includes the Policy Document on the North Sea 2016-2021 that specifies the general frameworks for (spatial) harmonisation between the users of the sea and also in relation to the marine ecosystem. These instruments help to improve the engagement of coastal regions and towns, the promotion of international consultations in the Netherlands and the North Sea countries and addresses the question of financing possibilities and the division of roles between public authorities, the private sector and knowledge and research institutions.

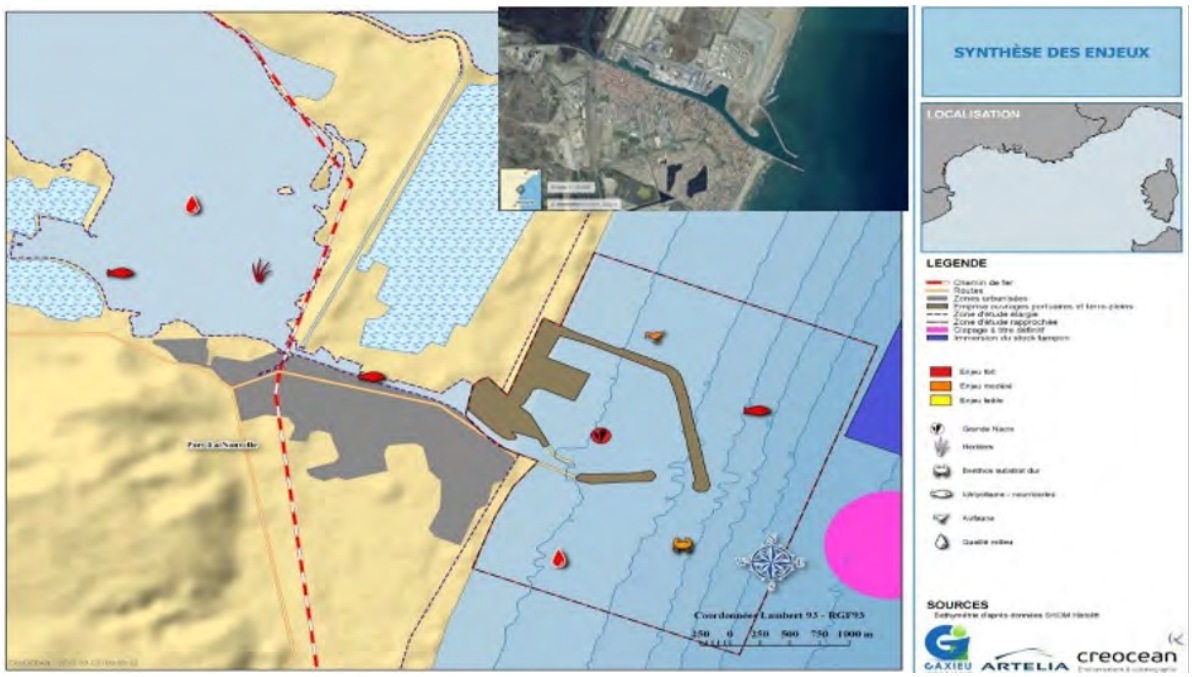


Figure 6.2
Expansion of Port-La-Nouvelle

1 https://www.government.nl/documents/policy-notes/2014/07/28/north-sea-2050-spatial-agenda
2 https://www.noordzeeloket.nl/en/policy/noordzeebeleid/

Box 6.2

Fisheries management measures in Peru

Peru's National Fisheries Society (SNP) discussed with local fishers various management measures, which are now part of the participatory actions linked with the National Maritime Strategy (2019).

A first measure was to ensure consistency between fishing effort (the number of vessels and their capacity) and the amount of fishing that can be undertaken in relation to a given species. When full exploitation is reached in a certain region of Peru, regulators may stop issuing permits, so as not to increase fishing effort beyond a reasonable level.

A second measure was to set national fishing quotas. While closing fisheries is a good measure, it is often not enough to ensure that only enough is fished to allow for adequate renewal of the resource. Thus, regulators choose to establish how much the Peruvian fleet can fish during a certain period in a specific location.

The third measure was to set individual quotas per vessel by establishing a proportion of fishing for each of the vessels that have a permit, and to determine what fraction of the overall quota they may fish during a given period in a specific location.

Finally, regulations and enforcement measures were put in place to ensure that only those with permits (or licences) fish up to their quota in the specific fishing area.

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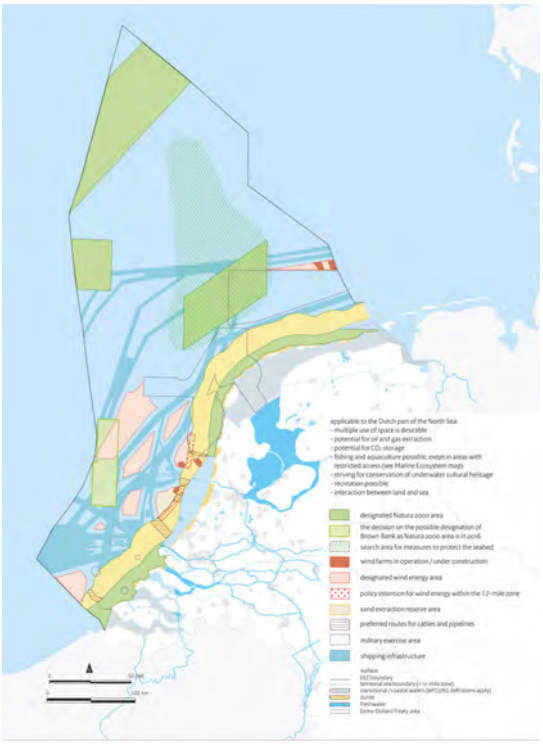


Figure 6.3
Integrated Maritime Policy Map

© Government of the Netherlands, 2014.

6.3 Spatial allocation of uses

Sector perspective is at the core of the zoning approach, where decisions are made on priority, reserved use, allowed use, restricted or forbidden areas per sector (**Box 6.3**). There are cases in which 'zoning' means to define more general zoning categories, instead of defining the specific development areas for each use, according to the preferred scenario (**Box 6.4**).

Alternatively, some plan documents may set general conditions for specific sectors on the use of the sea area without area designations. In these cases, the plan defines policy guidance and consideration for approving the location of new uses and activities.

Although missing from many marine spatial plans, zoning and its regulations are often the principal instrument needed for comprehensive implementation (IOC-UNESCO, 2009).

Zoning is a spatial planning tool used to allocate rights and responsibilities for use of space. Different zones in the marine space may allow different uses, or different levels of use, based on a determination of an area's suitability for those uses (Day et al., 2019).

6.4 Developing the spatial plan

The Welsh Government, in its 2004 plan, defined spatial planning as 'the consideration of what can and should happen where'. During the MSPforums in La Reunion and Vigo, spatial planning was also defined as 'the where of decisions' or 'the mapping out of all the assets contained within a given area', the ocean.

These simple definitions require additional literature and examples to explain how a spatial plan reflects something more aspirational about MSP.

Scotland's National Marine Plan (The Scottish Government - Riaghaltas na h-Alba, 2015) covers both Scottish inshore waters (out to 12 nautical miles) and offshore waters (12 to 200 nautical miles). It also applies to the exercise of both reserved and devolved functions.

The plan includes 16 chapters, 3 annexes and a glossary. The first 5 chapters cover the introduction, the marine planning context, the vision, objectives and the policy approach to achieving a sustainable economy, promoting good governance and using sound science responsibly, all of which are essential to the creation and maintenance of a strong, healthy and just society capable of living within environmental limits.

The other 11 chapters are dedicated to single sectors: sea fisheries, aquaculture, wild salmon and diadromous fish, oil and gas, carbon capture and storage, offshore wind and marine renewable energy, recreation and tourism, shipping, ports, harbours and ferries, submarine cables, defence and aggregates.

The structure of each chapter first links the objectives and policies of each sector to those included in Scotland's general and assumes that not all the sectoral objectives can necessarily be achieved directly through the marine planning system, although they are considered important in the context of planning and decision-making.

Box 6.3

Spatial dimensions of ports

A port is a location that has convenient physical features (such as a sheltered bay or estuary) and therefore allows for a more effective interface between the maritime and land domains than other locations. Although the location of a port does not change, the site can be improved through dredging and land reclamation and can also be adapted in relation to large production and consumption areas.

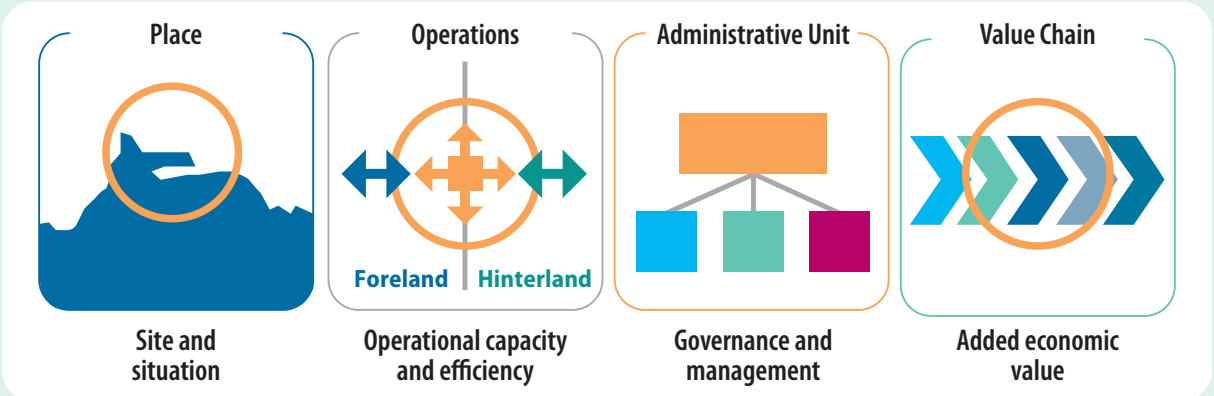
Spatially, four main dimensions help define the role and function of a port: place, operations, administrative unit and value chain.

A port has operational characteristics in terms of the type of traffic it can handle and the associated volumes. This depends on the infrastructure linking the land port and the hinterland port (its hinterland market area). With capital investment and management, the operational efficiency of a port can always be improved.

A port is a well-defined administrative unit comprising land ownership and a jurisdiction. The port authority is a common administrative framework for a port and they often have the right to spearhead port development projects.

The port, as indicated above, adds value to transport and supply chains. Historically, industrial activities tended to be located within or close to ports, a process which still continues and which is complemented by a wide range of cargo distribution activities.

Source: Rodrigue, 2020.



Box 6.4

Examples of zoning categories

A marine functional zone is an area with a 'best use' designation, assigned considering natural resources, environmental conditions, geographical location, state of development, use of the sea area and islands, as well as national or regional demands for development. It is a science-based decision-making process to prevent unplanned human activities in the marine space through specifying basic uses and environmental protection requirements for designated sea areas.

The marine functional zoning (MFZ) applied in China adopts a two-level classification system, which is divided into 8 zones and 22 subzones. The first level zones are: 1. Agriculture and fishery; 2. Port and navigation; 3. Industrial and urban construction; 4. Mineral and energy; 5. Tourism and recreation; 6. Marine protection; 7. Special uses; and 8. Reserved.

The system includes methods for evaluating existing uses and the MFZ to inform future planning and analyse future sea-use demand.

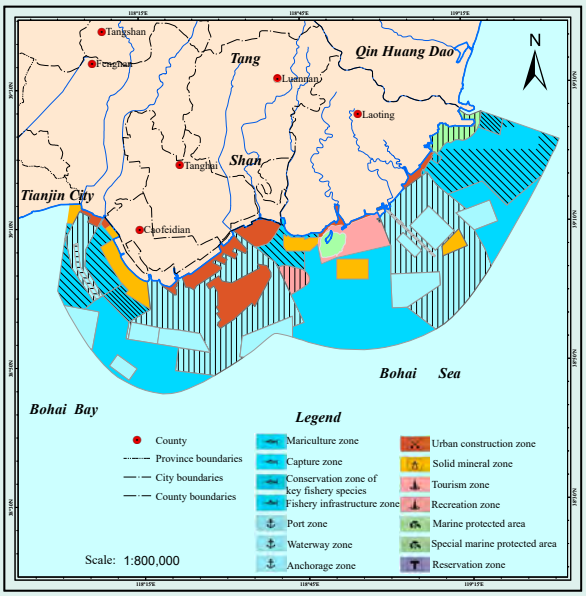
In Germany, priority areas have been designated for shipping and wind energy development; other uses are prohibited in such areas unless they are compatible with the priority uses. The designation of areas for shipping takes into account the principle of international law, attributing priority to this use. Recognised shipping routes that are indispensable for international shipping constitute the framework of the overall planning concept.

Reservation areas have been designated for shipping, pipeline and research uses that are considered particularly important when balancing with spatially significant competing uses. Further wind power areas are to be developed by allowing co-use – for example, it should be possible to fish passively in the outer areas of wind farms, i.e. with fish traps and baskets

The plans, which were presented by the interior ministry, identify parts of the Dogger Bank, a transnational sandbank in the middle of the North Sea, as an additional priority area for wind power development.

One area each in the North Sea and the Baltic Sea will be redesignated as a priority area for wind energy from 2030, unless the Federal Ministry of Transport can prove by the end of 2025 that these areas are needed for shipping for compelling reasons.

Sources: Clean Energy Wire, 2021; UNESCO-IOC, 2021*c*.



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Purposes of a zoning plan

- To provide protection for biologically and ecologically important habitats, ecosystems and ecological processes
- To separate conflicting human activities or combine compatible human activities
- To protect the natural values of the marine management area while allowing reasonable human uses of the area
- To develop certain activities, providing a sound basis for long term investment
- To allocate areas for reasonable human uses while minimising the effects of these human uses on each other and nature
- To preserve some areas of the marine managed area in their natural state, undisturbed by humans except for scientific or educational purposes

Source: Adapted from IOC-UNESCO, 2009.

Each chapter includes a background and context per sector, key issues for marine planning, interactions with other users, status of the sector and management measures, effects of climate change, and marine planning policies affecting the sector and future perspectives. The annexes cover the key findings of the national ecosystem assessment, goods and services, the strategic objectives and a specific annex dedicated to Scotland's Marine Atlas and the information required for the National Marine Plan.

6.5 Evaluating the draft marine spatial plan and strategic environmental assessment

It is useful to scrutinise a draft plan from an evaluative perspective. This will reveal whether it is likely that the plan will lead to the preferred outcomes, and also any potential impacts. If this is undertaken during the plan development stage, the plan can still be modified to ensure it will match expectations and to mitigate possible negative outcomes.

Section 8.2 presents approaches for a prior evaluation of the plan. Two different instruments are used in environmental assessment: the strategic environmental assessment (SEA) and the environmental impact assessment (EIA). Here, the focus is on strategic environmental assessment (SEA). There is no single definition of SEA, but it can be generally understood as a sustainability-based assessment that needs to consider the environmental, economic, social, cultural and intergenerational consequences (and positive impacts) of a plan. SEA aims to ensure that the consequences are appropriately addressed at the earliest possible stage of decision-making (CBD, 2012*b*).[3]

The strategic environmental assessment (SEA) identifies, describes and evaluates the environmental impacts of regional planning and sectoral plans as well as planning alternatives. Environmental concerns are thus taken into account at an early stage in planning decisions.

Box 6.5

Ensuring a strategic environmental assessment

Strategic environmental assessments and environmental impact assessments inform decision-making and these assessments are mandatory in many countries and regions, including for marine spatial plans that may have significant effects on the environment.

Table 6.1
Aspects related to strategic and impact assessments

Aspect	SEA	EIA
PLANNING LEVEL	SEA is an overarching framework to enable comprehensive and forward-looking assessment of potential environmental implications at the policy, planning and programme level.	EIA represents a definitive approach to assessing the specific environmental impacts of a specific proposed development.
SPATIAL SCALE	SEA is undertaken at a larger spatial scale, such as an MSP region or sector-wide at a national level.	Small spatial scale focussing on the maximum extent of the project boundary impacts (e.g. of a windfarm or aquaculture facility).
LEVEL OF DETAIL	At the strategic scale, the complexity of plans means that assessment of effects can only be articulated in general terms such as direction of travel (positive or negative).	At the small scale of EIA, sufficient detail of project design is required to enable quantification of impacts, and judgement on the significance of these.
FLEXIBILITY	Iterative and adaptive, informing changes to the plan based on assessment including review of alternative options to the plan.	Limited flexibility - mitigation measures can be proposed to address negative effects but there is limited flexibility to adapt the proposal.
RESPONSIBILITY	Responsibility of planning authority.	Responsibility of proponent (e.g. industry).

Source: European MSP Platform, 2021*b*.

3 https://www.cbd.int/doc/meetings/cop/cop-11/official/cop-11-23-en.pdf

It is also advisable to include in the SEA an analysis of alternative planning options. One option would be that there is no plan at all; another option might be about how to achieve the same societal needs and objectives through other kinds of policies (Gjerde et al., 2021).

Assessment methods for different types of impacts, including the very relevant consideration of cumulative impacts, are presented in **Section 5.2.5**. When evaluating a plan it is also necessary to assess the environmental impact of certain activities on neighbouring countries.

Therefore, at an early stage of planning, countries should notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries (Espoo convention).[4] The National Marine Planning Framework of Ireland - Strategic Environmental Assessment Statement[5] provides a good step-by-step record of how the SEA process influenced the national marine plan of Ireland as well as providing a useful example of how to report on an SEA process for MSP.

6.6 Endorsing and approving the marine spatial plan

Following the principle of participation, the draft marine spatial plan should be published for public consultation, including at transboundary level where necessary. The MSP team will need to define how to address responses from stakeholders after consultation before approving the plan (e.g. creating a response template, coding, identifying themes, transboundary issues to check in a neighbouring country's plan). Such an approach should address the concerns of stakeholders in order not to delay endorsement and approval of the plan. In order to facilitate the endorsement and approval process, the plan document should be kept as objective, simple and practical as possible.

In cases where the MSP process is funded through project initiatives or donors, the formal adoption process may fall outside the duration of the project. In this case, further engagement with the relevant national ministries and legislative body could help secure agreement for a road map for endorsement developed for easy transposition and approval in national legislation before or after the end of the project.

Different situations can be considered depending on whether there is one plan or several plans for different countries. The same applies if the region is shared by several Member States of the same alliance/association (i.e. the EU) or a plan involving third countries. Coordination mechanisms are an essential tool at this stage and should have been specified when the plan was drawn up.

Transboundary coordination of planning is realised during this stage, where the plans are the outputs. Discussions and consultations with neighbours are essential during plan development, but the exchange has to be deeper than information sharing. The planners also need to understand how the neighbours' planning systems (including map practices), as well as the systems of licensing and sectoral decision-making, take place.

6.7 Defining the implementation process

To ensure successful implementation, the marine spatial plan needs to be clearly included within the institutional framework and working routine of the competent authorities, and the objectives assigned to the relevant parties. Similar approaches are followed by regional organisations to align objectives and the coordination mechanisms to overcome multi-jurisdictional challenges.

The drafting and implementation of planning needs to have a 'system' of plans, as is typical of terrestrial planning. Land-based planning is structured around a sequence of plans, policies and strategies that usually transpire from documents from a generic level to others that are more specific and detailed. This sequence or structure implies a hierarchical arrangement in which more detailed and specific plans are the instruments that execute and realise policies and strategies. Marine spatial plans require procedures and structures that allow them to descend to levels of greater operability with the appropriate organisation of maritime space and articulation with existing sectoral plans and procedures.

4 Espoo Convention on Environmental Impact Assessment in a Transboundary Context (1991) https://unece.org/fileadmin/DAM/env/eia/eia.htm
5 www.gov.ie/en/publication/60e57-national-marine-planning-framework/

Box 6.6

Spain's public consultation on its maritime spatial plans

In 2017, Spain adopted the Royal Decree 363/2017 of 8 April establishing a framework for maritime spatial planning, which transposes into the Spanish legislation Directive 2014/89/EC of the European Parliament and of the Council of 23 July 2015, establishing a framework for maritime spatial planning.

Spain's five marine spatial plans, one for each of the five marine subdivisions, followed the legal basis for public consultation processes stating that 'without prejudice to the consultation prior to the drafting of the text of the initiative, when the regulation affects the legitimate rights and interests of individuals, the competent management centre shall publish the text on the corresponding web portal, with the aim of hearing the citizens affected and obtaining any additional contributions that may be made by other persons or entities'.

The Directorate General for the Coast and the Sea of the Ministry for Ecological Transition and the Demographic Challenge is the authority responsible for drawing up these maritime spatial plans in Spain.

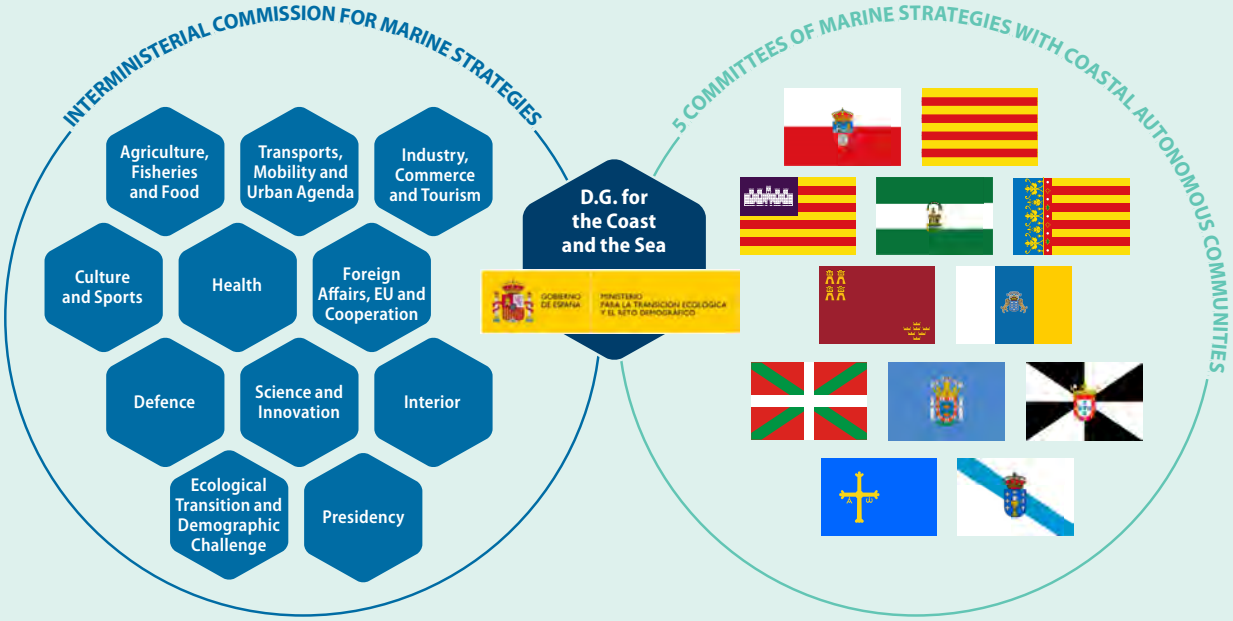
The documentation submitted for hearing and public information included:[1]

- Draft Royal Decree X / 2021 approving the maritime spatial plans for the five Spanish marine subdivisions
- Annex I Maritime spatial plans: Part common to the five marine subdivisions, corresponding to blocks I, II, IV and V, including the cartographic representation of the scope of application and zoning (INFOMAR Information System with all geographic information contained in the plans is accessible at the appropriate scale and level of detail in the INFOMAR information system: http://www.infomar.miteco.es)
- Annex II Maritime spatial plans: Specific part for each marine subdivision, corresponding to Block III - Diagnosis: North Atlantic, South Atlantic, Strait of Gibraltar and Alboran Sea, Levantine-Balearic, Canary Islands

All this documentation, together with the Strategic Environmental Study of the plans, was also subject to public scrutiny and consultations with the affected public administrations and interested parties, in accordance with the provisions of the National Law on environmental assessment.

Any comments could be sent by any person or entity, public or private, Spanish or foreign, through the means provided for in law, to the Directorate General for the Coast and the Sea, which was obliged to publish each and every input prior to the adoption of the Royal Decree. The decree will be approved by the Council of Ministers and will enter into force after signature by the King and publication in the Official State Gazette.

Source: Ministry for the Ecological Transition and the Demographic Challenge of Spain, 2021.



1 https://www.miteco.gob.es/es/costas/participacion-publica/00-rd-planes-oem.aspx

Box 6.7

Transboundary consultations

Planners from national authorities responsible for MSP in the Baltic met several times during the course of the BalticScope project, and adopted a geographic approach to seek solutions for transboundary focus areas: southern Middle Bank, Krieger's Flak, Adlergrund, Öresund strait and the Pomeranian Bay (encompassing Odra Bank and the approach fairway to the ports of Świnoujście and Szczecin).

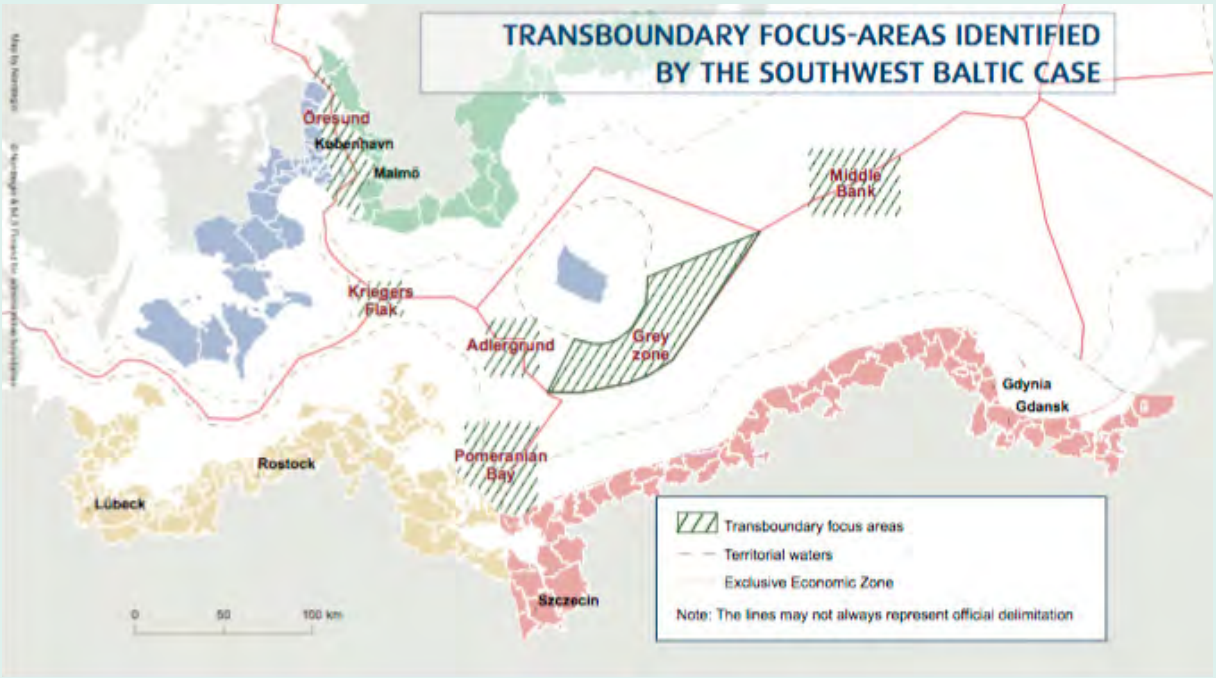
Methods included:

- partner/planners meetings to facilitate interaction and discussion
- stakeholder involvement through national meetings and a stakeholder conference
- topic papers outlining latest developments and trends for 4 key sectors with transboundary impacts: shipping, energy, fisheries and environment/nature protection
- matrix of interests to map both present and potential future national sectoral interests within the focus areas
- bilateral and trilateral meetings with smaller groups of relevant planners to share relevant national knowledge and projects ideas or plans, as well as common data and maps

The transboundary group is responsible for:

- The exchange of key information and data between the planning authorities in relation to the main interests of the four key sectors: shipping, energy, fisheries and environment
- Mutual learning in relation to countries' different planning systems, legal frameworks and existing/future marine spatial plans
- The identification of key transboundary conflict areas in the Southwest Baltic
- Increased stakeholder involvement, particularly of national level authorities and relevant agencies
- Identification of key sectoral synergies and conflicts
- The development of a number of planning suggestions outlining potential planning solutions for transboundary MSP issues within focused geographic areas (see main report)
- The development of common data sources, including maps visualising shipping and socio-economic evidence, as well as other 'working maps' on overlapping interests in transboundary focus areas
- The development of a strategy to enable and facilitate the use of the ecosystem-based approach as the basis for MSP, including three checklists to be utilised by planners during different phases of the planning process: i) the general ecosystem approach in the MSP checklist; ii) a planning support checklist; and iii) the SEA in the MSP checklist
- The development of a number of key general and sectoral policy and planning recommendations

Source: BalticScope Project, 2017.



© BalticScope, 2017.

6.7.1 Organisational framework and channels for implementation control – how will the marine spatial plan be realised?

A roadmap should be drawn up for the adoption of the plan, defining procedures and which institutions are responsible, assuming that there is provision for this in the regulations governing a plan. This should be supplemented with implementation information identifying which sector institutions are responsible for plan implementation and the steps that they need to take to ensure use of the plan, since the management and application of the plan are normally undertaken at a sectoral level. Organisational changes within these sectoral institutions, including some adjusted competences and new staffing, might be necessary (IOC-UNESCO, 2009).

It is advisable to establish an interagency coordinating body to follow up the implementation (IOC-UNESCO, 2009), led by the MSP authority. This group could be an existing MSP working group formed at the beginning of the planning process to inform plan development.

6.7.2 Budget and financial allocation prior to approval

Together with finalisation of the plan, it is necessary to define the budget allocation of new funds to implement, monitor and evaluate the marine spatial plan (IOC-UNESCO, 2009). Some processes have focused on resources to develop the plan without properly defining the funds for its implementation, which might result in it being ineffective.

Administrative capacity building involves costs that are differentiated from drafting costs. Maintaining implementation over time requires specific, financed resources, so it is essential to incorporate and guarantee costs for continuous and permanent operation of the technical-administrative structures in charge of marine plan execution and the design of the implementation tools.

6.8 Developing MSP capacity – aspects to be considered following the first marine spatial plan

This phase of the planning process is typically under the responsibility of the administrative bodies in charge of developing the plan and the regulations that guarantee the transposition of measures to enable progress towards the vision and objectives formulated in the plan. Capacity development plays a fundamental role here, since the individuals responsible for this work are probably different from those who drew up the plan. Capacity development must ensure the correct application of the measures, bearing in mind that the plan integrates different activities that must now be managed in an interrelated manner.

Here, a lot can be learned from spatial planning on land. In some countries, MSP is actually an extension of land planning and stipulated as amendments to planning law. Capacity building is rather similar to land planning, with necessary additions to fit the peculiarities of planning and decision-making at sea.

MSP should be considered in the wider context of spatial planning, considering the interaction between land-based and marine planning, including river basin management and integrated coastal area management.

Examples of capacity development needs:

- How to establish and conduct a genuine and transparent stakeholder consultation that justifies which suggestions were accepted and rejected
- How to develop zoning (if it is decided to include this kind of method in the plan)
- How to develop a strategic environmental assessment
- How to use the plan in consenting and licensing decisions
- How to place the marine spatial plan within the governance and legal framework

7 Enabling implementation of the marine spatial plan

THIS CHAPTER DESCRIBES

- **How to establish MSP regulations**
- **The dialogues with maritime sectors and actors and their role during the implementation**
- **Capacity development for competent authorities and maritime sectors on the implementation of the plan**
- **Compliance and enforcement of the marine spatial plan**

This chapter focuses on factors that support the implementation of the marine spatial plan. The level of implementation determines the extent to which the objectives will be met. Implementation needs to be followed up regularly and is best organised through dialogue with the key actors.

Implementation of the marine spatial plan is the longest phase in the planning cycle. A recent review of 11 MSP practices found that review periods for established marine spatial plans range from 5 to 12 years, depending on the country (Stelzenmüller et al., 2021). At worst, rapid changes can make some of the assumptions behind the established marine spatial plan outdated. This is why it is important to invest in an analysis of future conditions and to conduct scenario processes as proposed in **Section 5.2**; anticipating plausible future developments can help to avoid surprises, or at least allow for adaptation.

Even if rapid changes are possible, many processes are slow and gradual. Some natural processes can be slow, but economic development projects can also take a long time. For instance, once a marine spatial plan indicates an area for offshore wind energy production, the technical planning, permissions and implementation of the project typically takes between 7 and 11 years, and sometimes longer (Hundleby et al., 2017).

The fact that both rapid and slow processes coexist should be taken into account when organising implementation of the marine spatial plan. It is better to design it as a process that expands over planning cycles, with frequent follow-up measures to deal with any potential rapid changes. The whole process should benefit from innovative technologies. Better integration of ocean big data and improved data sharing between scientists, industry and the government could facilitate the planning, follow-up and dealing with the changes. With all historical and current data about the ocean, which could be uploaded, accessed and updated in real-time, the digital ocean twin and similar technologies can provide advanced solutions to all phases of MSP, especially in regard to the ecosystem-based approach (European Marine Board, 2019).

The authorities that led the planning process may play a key role in implementation, have a role in supervising implementation, or work with other authorities or entities to transition the leadership from planning to implementation. In many cases over the last decade, implementation has been led by one or more sectoral authorities, regulators and/or companies who will be the end-users of the marine spatial plan. Based on the plan, sectoral authorities and companies can choose where to develop a project, whereas regulators consult the plan to evaluate if the proposals are aligned to it. In cases where sectoral and terrestrial planning authorities may lead on the implementation and use of the plan, supplementary documents are needed, with a specific description of how to use the plan and who will be responsible for what is advisable. The role of MSP is to overcome the logic of 'first come, first served' towards a more plan-led approach.

It is important to clarify that a marine spatial plan does not replace or act as a substitute for other processes that lead to authorisation and permits, licences or other credentials that permit activities. For example, if a proposed project is located inside or within the boundary of a zone area identified by the plan, the proponent (e.g. a company) will be required to follow all necessary steps according to the applicable regulations or policy, including possibly environmental impact assessments and public review or consultations. Proponents need to go through the licensing process in order to provide a more detailed project plan and an environmental impact analysis.

Indeed, the potential development areas identified by a plan are suggestions based on the agreed vision for the planning territory as a whole. In addition, these areas should indicate the places where such activities can be developed without negatively impacting other sectors and/or areas with a high ecological value. For these reasons, MSP is viewed as an approach that increases legal security for enterprises and de-risks investments, which are great benefits for investors.

7.1 Establishing regulation to refer to the implementation of the marine spatial plan

MSP regulation is the basis for the implementation of the marine spatial plan, which is often based on relevant laws. It usually includes the necessity of MSP implementation, the main bodies concerned with the implementation, the methods of implementation, and the interrelationship between MSP and sea use approval and the acquisition of sea area use rights.

An implementation plan or roadmap could be developed to clarify tasks and procedures, although it is still quite rare to find this type of document for existing MSP processes.

For transboundary coherent marine spatial plans, the related conventions and agreements are the basis for planning implementation, often requiring efficient communication between two or more countries. It is important that countries discuss and harmonise how and when they will implement the common regional objectives within each national planning process. Usually, the countries have different time frames, so this kind of coordination could be a mechanism to overcome this challenge.

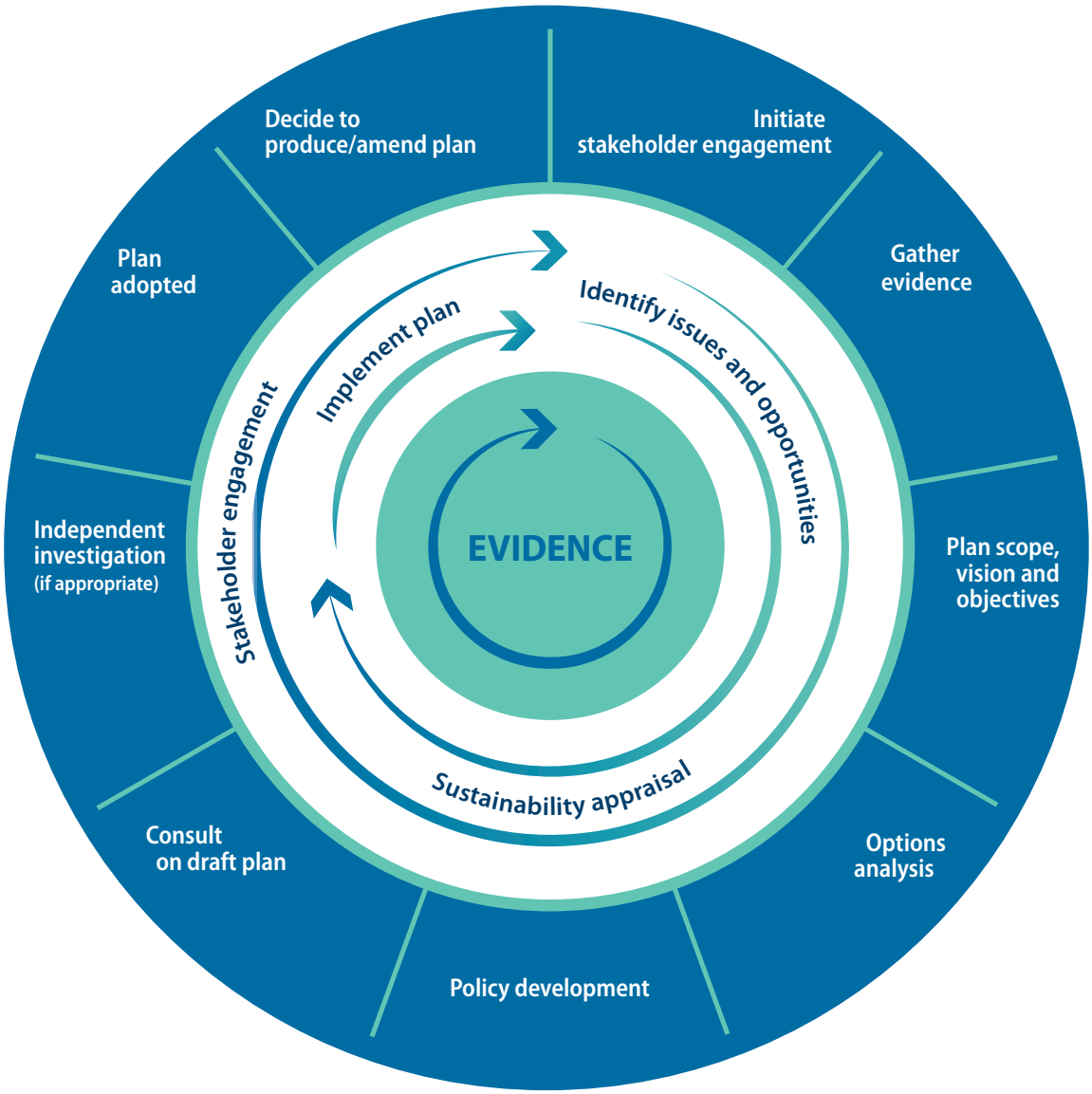


Figure 7.1
The MSP process

Source: Welsh Government, 2017.

7.2 Establishing a regular dialogue with sectors and other actors to follow up and support implementation

Having a sound evidence base will improve our knowledge of our seas, inform their sustainable use and management and enable effective marine planning.

The collection of evidence is a complex process which needs to be organised. Continuous engagement, education and awareness raising for sectoral decision-makers and regulatory bodies is important, especially in the case of non-binding marine spatial plans. It is also necessary to build the capacity of non-state actors, or at least awareness of the plan's objectives and new regulations. These working groups and interagency committees could facilitate the implementation of the plan and consider other ongoing initiatives and synergies that can impact the planning outcomes.

In the case of a transboundary marine spatial plan, communication between planning authorities from the different countries must be structured to allow for greater fluidity than is usual through diplomatic channels. Following activities in neighbouring countries and informing them of your country's progress is especially important for cross-border activities and possible cross-border impacts.

Box 7.1

Implementation guidance for the Welsh National Marine Plan

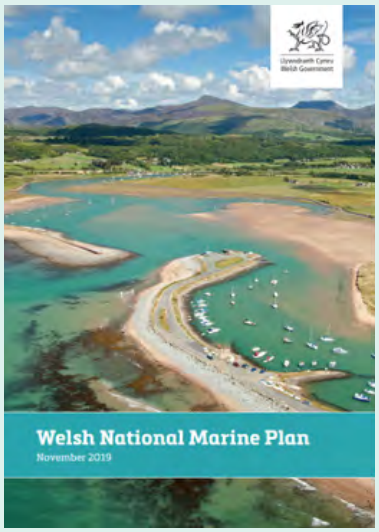
The Welsh National Marine Plan (WNMP) sets out the Welsh Government's vision and objectives for the Welsh marine plan area and policies to support their achievement, helping marine users and those undertaking land-based activities (with the potential to affect the plan area) to support the sustainable development of our seas. The WNMP supports sustainable development by guiding and supporting effective, proportionate and consistent decision-making.

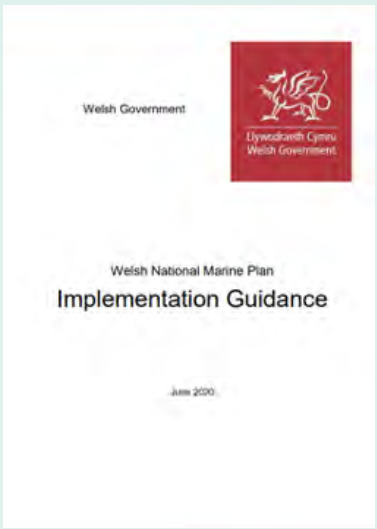
A supplementary implementation guidance (IG) supports the WNMP and is a consideration for public authorities in taking decisions which may affect the plan area. It provides further detail on WNMP policies to help ensure they are implemented effectively and consistently; it does not introduce new planning policy. This IG sits alongside other non-statutory plan-related policy, guidance and evidence to support marine planning for Wales, and will be updated periodically.

Section 58 of the Marine and Coastal Access Act 2009 (MCAA) requires all public bodies to:

- Take authorisation or enforcement decisions (s. 58(4)) that affect or might affect the UK marine area in accordance with the UK Marine Policy Statement 2011 (MPS) and relevant marine plans, unless relevant considerations indicate otherwise (s. 58(1))
- State their reasons where authorisation or enforcement decisions are not taken in accordance with the MPS and relevant marine plans
- Have regard to the MPS and relevant marine plans when taking decisions that affect or might affect the UK marine area which are not authorisation or enforcement decisions (s. 58(3))

Another useful source of information for applicants and decision-makers is the Wales Marine Planning Portal, which contains relevant spatial data and maps. The portal is helpful for understanding existing and future potential use; determining whether areas of relevance to their proposals are already subject to pre-existing licences, option and exploration agreements or applications; identifying potential conflicts and opportunities; identifying opportunities to avoid, minimise and/or mitigate adverse impacts to achieve compatibility with other users; and considering whether proposals can coexist with other, existing sector developments or activities.





7.3 Training competent authorities and maritime sectors on the implementation of the plan

The implementation or action plan is a key component of the MSP process. To guarantee the effective development of the plan on the ground, competent authorities require capacity building in new procedures. This needs to be considered at an early stage of the planning process, taking into consideration how and by whom the plan is going to be used. This will ensure that a plan is useful, usable, understood and used.

Government bodies' knowledge and acceptance of the marine spatial plan will determine the effectiveness of its implementation. In addition, capacity development should focus on how MSP could be useful for promoting the blue economy and sustainable development.

An implementation plan and a planning implementation system (usually based on GIS and management rules, for example) could improve the efficiency of implementation.

7.3.1 Share of responsibilities

The implementation of the plan is linked to investment programmes, which in many cases do not depend on the planning institutions but on the private sector. In addition, government incentives might foster investment in the priority maritime sectors of a plan.

The marine spatial plan does not only guide maritime sectors. It has become apparent that the manner in which sectoral plans are implemented has a direct effect on how the marine plan is implemented. It is a two-way process.

In light of the above, there is a need to develop maritime sectors' MSP capacity in such a way that they realise the benefits of such a process.

7.3.2 Conciliation

Conciliation refers to making different positions or approaches compatible or bringing them into agreement. When there are conflicts among different sea-use activities or between human economic activities and environmental protection objectives, relevant departments need to follow certain laws and regulations to reconcile the conflicts or, if this is not possible, to ensure that they remain manageable.

7.3.3 Cooperation

Cooperation can be understood as the act of working together. The implementation of MSP involves management departments, law enforcement departments and various stakeholders. Therefore, sound implementation must be through the joint efforts of multiple parties, ensured by the planning authority. In cross-border MSP projects, multi-country, multi-department and multi-stakeholder cooperation is particularly significant.

7.3.4 Coordination

The coordination role of the MSP authority is essential to ensure the marine spatial plan is implemented on time. In general, to carry out the implementation, ad hoc committees and groups should be set up to lead the communication and implementation of relevant regulations, the participation of stakeholders and the cumulative impact assessment, etc. Through collaboration mechanisms of multiple departments, the overall planning can be carried out smoothly according to the original work plan.

7.4 Compliance with the marine spatial plan

The compliance of sectoral authorities and regulatory bodies is key to MSP. Compliance occurs when the planning requirements are clearly defined and met, thus the desired objectives can be achieved. It occurs, for example, when human activities are developed within the respective designated zones (IOC-UNESCO, 2009).

The degree of compliance may vary according to the nature of the plan, i.e. if it is binding or guiding. A binding plan is simpler when it comes to implementation, as it has strong legal support. Implementation of non-binding plans require frequent collaboration and supervision.

Compliance and enforcement are essential elements to ensure the implementation of the marine spatial plan. General requirements for compliance and enforcement – such as zoning regulations, permits and licences – will be most effective when they:

- Are clear and understandable
- Define which human activities are subject to the requirements
- Define the requirements and any exceptions or variances
- Clearly address how compliance is to be determined by specifying procedures
- Are flexible enough to be constructively adapted according to transparent and acceptable justifications

Compliance can be promoted by:

- Educating the public and other stakeholders about plans, rules and regulations, and the implications for each stakeholder group
- Developing 'codes of conduct' through agreements with various stakeholders
- Technical assistance through which governmental agencies provide information on the feasibility of sectoral plans and projects
- Installing physical markers, such as buoys, around important habitats or security zones

The idea is that the marine spatial plan gives guidance and conditions for the use of sea areas, and these are then translated into more detailed decisions in approval procedures. In some countries the zoning regulations are more indicative than direct requirements.

Source: IOC-UNESCO, 2009.

The implementation is in the hands of sectoral authorities, approving authorities, the private sector and local communities, organised or not. Permits and licences, for example, are indeed granted by sectors or special regulatory authorities. To ensure compliance with the marine spatial plan, adaptations to sectoral plans and regulations should be coordinated whenever necessary. Procedures should also define what to do in cases of non-compliance. Moreover, stakeholders will need to be well informed about the final plan and its implications.

It may happen that a specific sector was not contemplated by the plan or a project is proposed for an area not designated to any activity. In these cases, additional negotiations with stakeholders could be undertaken to adapt the plan or develop complementary plans (depending on if and how the regulation allows these changes).

Box 7.2

Ensuring compliance with the marine spatial plan: The case of Mozambique and Portugal

In order to foster legal certainty and transparency between stakeholders, the consenting and licensing process should be 'plan-led'. The MSP legislation and process in Mozambique and Portugal promotes the right to private use of the national maritime space which is granted by concession, licence or authorisation for a certain period, based on the national marine spatial plan. These permits are called **'Titles for Private Use of Maritime Space'**, and allow developers and users in Mozambique and Portugal to use the marine space by means of a concession, licence or authorisation, depending on the nature of the activity, which may be either of commercial, or scientific research nature.

In cases where a particular marine use is not covered by the marine spatial plan, the legal framework establishes that specific adaptations and improvements should be made through complementary plans.

In Mozambique, through Decree no. 21/2017, of 24 May, the Government of Mozambique approved the Regulations which Establishes the Legal Regime for Use of the National Maritime Space, the Minister of Sea, Inland Waters and Fisheries is the competent authority to approve licences, authorisations and concessions for sea areas of up to 100 km^2. However, concessions for areas over 100 km^2 shall be approved by the Council of Ministers.

Whenever there is a conflict or overlap between the uses of existing or potential activities in the same sea area, priority and preference shall be given to the activity or use that has (i) greater social and economic advantage for the country and (ii) maximum coexistence of uses or activities. The costs for the reallocation of the existing project shall be incurred by the party interested in the development of the new project. Whenever such reallocation is not possible due to the particularities of the activity or the lack of similar areas suitable for developing the existing activities, the interested party shall compensate the title holder for his investment and possible loss of profit.

Sources: Government of Mozambique, 2021; DGRM, 2021.

7.5 Enforcing the marine spatial plan

Enforcement is the set of actions that governments take in relation to regulating human activities to achieve compliance with the marine spatial plan (IOC-UNESCO, 2009). Enforcing a large-scale spatial plan that is often light on detail is a complicated matter, especially in cases where the plan is not legally binding. Where it is legally binding, then sector authorities or approving bodies are obliged to follow what is stipulated in the plan.

An important task in relation to enforcement is to ensure that the rules are clearly communicated to all stakeholders, and consistently applied on the basis of transparent policies and procedures (IOC-UNESCO, 2009).

Stakeholders such as NGOs and market institutions can also support enforcement by detecting and reporting non-compliance actions. NGOs may take legal action against a company for non-compliance or against the government for lack of enforcement. On the other hand, banks and insurance companies may require the assurance of compliance with the marine spatial plan before issuing a loan or insurance to an offshore development (IOC-UNESCO, 2009).

Typically, the idea is that the plan gives general level guidance or conditions, which are then given more detailed content in sectoral decision-making or approval procedures:

- **Delegation of enforcement to appropriate authorities**
- **Inspections to determine the compliance status of the regulated human activities and to detect violations**
- **Negotiations with individuals or managers of activities that are not compliant to develop mutually agreeable schedules and approaches for achieving compliance**
- **Legal action, where necessary, to compel compliance and to impose sanctions for violating the law, or posing a threat to public health or environmental quality, including financial penalties or withdrawal of a permit**

Source: Adapted from IOC-UNESCO, 2009.

Implementation in different countries

Latvia

Altogether, 16 specific measures were agreed during negotiations with several relevant ministries and authorities (on multiple levels) for the implementation of the Latvian marine spatial plan, according to the general and strategic objectives.

Once a year, for the purpose of monitoring the implementation of the marine spatial plan, the Latvian Ministry for Environmental Protection and Regional Development reviews the actual use of the sea and updates the geospatial data and maps of the plan as required. In addition, the Ministry established the Maritime Planning Working Group, which consists of 24 representatives from different ministries, agencies, planning regions and associations. A similar working group was already in place during the preparation of the marine spatial plan. The working group will meet face-to-face at least once a year, and is expected to ensure exchange of the most up-to-date information and data for the purposes of the implementation of the maritime plan. To support the follow-up, surveys will be conducted to collect input from a larger group of experts and stakeholders.

Belgium

The official advisory committee also oversees the implementation of the 2014–2020 plan on an annual basis. The framework document consists of distinctive tasks, with a responsible authority, objective, completion year and relevant indicator for each task. Most indicators are qualitative, such as specifying whether a certain type of study was conducted, or a guideline published. The committee specifies the level of completion towards the objective each year on a three-level scale: 'no progress', 'some progress' and 'completed'.

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8 Monitoring, evaluation and adaptation

THIS CHAPTER DESCRIBES

- **How to evaluate the planning process and stakeholder overview**
- **The relevance of evaluating the plan and its implementation**
- **The evaluation of the MSP results and how to report it**
- **Options for adaptation (review and revision of the plan)**

This chapter describes approaches to evaluation in different phases of the planning cycle.

Planning is cyclical and iterative. The information gained from monitoring and evaluation is valuable in order to improve the planning process and to make well-informed adaptations where necessary.

Adaptive MSP is based on a circular or iterative planning process, which periodically feeds back information from the past to enhance and improve the next planning cycle. Indeed, evaluation is the stage of MSP where the greatest amount of learning should take place. Faced with the daily demands of their jobs, planning authorities and managers are often unable to systematically monitor and review the implementation and results of the marine spatial plan. However, the risk of not doing so is that money and other resources can be wasted on plans that are not achieving their objectives (IOC-UNESCO, 2009).

In general terms, the evaluation should explain what works, for whom and why? Methodological choices for evaluation, as well as measuring the impacts or use of indicators, should aim to answer these questions. These questions can be answered by applying alternative methods. Science-based monitoring and evaluation may require considerably more resources than a dialogue-based approach. Both approaches have their strengths and the recommendation is to find combinations of these approaches.

The IOC-UNESCO *Guide to Evaluating Marine Spatial Plans* (2014) underlines the importance of evaluation, especially in terms of measuring whether marine spatial plans achieve their stated objectives, which in turn correspond with societal goals in relation to sea areas. The approach presented in that guidance works well if your MSP is detailed and binding. Then you can justifiably link future developments at sea to the planning provisions given in the MSP. When the MSP system is more strategic and guiding, rather than steering, the evaluation and monitoring process needs to be designed differently. Here, an evaluation approach that looks at MSP from different perspectives and in a broader context can produce useful information that helps to partially meet the challenge of knowing the effects of MSP (**Box 8.2**).

Learning from and improving MSP processes and plans are among the key purposes of monitoring and evaluation. In addition, the monitoring and evaluation produce information that can be used for ensuring broader societal transparency and for holding the responsible authorities accountable. The monitoring, evaluation and adaptation are all interlinked. Monitoring of the implementation of the plan and its outcomes is a continuous process that generates information needed for the evaluation which, in its turn, provides necessary information for adapting the plan when it is reviewed. As the MSP processes and planning cycles are typically several years long, it is useful to evaluate and monitor in several steps during the planning cycle. Evaluation – and consequently monitoring – can target different stages and aspects on MSP:

- the MSP processes
- the plan and its relevance
- implementation of the plan
- outcomes of the plan

Indicators are needed to follow up and evaluate the plan-making process, implementation and outcomes. **Section 4** presents the types of indicators, the key criteria for crafting good indicators, and offers some useful sources for their design.

8.1 Evaluating the planning process and stakeholder engagement

Evaluation of the process and how stakeholder engagement was conducted can make MSP processes more cost-effective, inclusive and improve the knowledge base for planning.

8.1.1 Process evaluation

The process evaluation scrutinises how data and methods were used in the organisation process. **Table 8.1** summarises the main criteria for evaluating the MSP process.

Table 8.1
Main criteria for evaluating the MSP process

Topic	Criteria
Validity of data and analyses	Incorporation of best available information
	Use of suitable methods and technologies
	Robustness, clarity and reproducibility of analyses
Consideration of alternatives	Methods for scenario-building
	Comprehensiveness and adequacy/justification of scenarios
	Procedures and methods for scenario assessment
Prospective impact assessment	Comprehensiveness and robustness of impact assessment methods
	Incorporation of assessment results in draft and final plan
Adequacy of resources (for plan-making)	Evolution of resources over the plan-making process, including sources of funding
	Ratio between available and necessary resources

Source: Carneiro, 2013.

8.1.2 Evaluating stakeholder engagement

An important element in the evaluation of planning processes is the involvement of stakeholders. **Table 8.2** presents a comprehensive set of evaluation criteria for both the participatory process and its outcomes. The questions can be adapted to the planning context.

Evaluation of stakeholder engagement is a means to address the overall consideration of social justice within MSP. As described in **Chapter 2**, the key elements of social justice are representation, recognition and distribution. Representation is, obviously, one of the key areas for evaluation of stakeholder engagement in MSP. The second element, recognition, can be one aspect of ex ante (anticipatory) evaluation of MSP. This type of evaluation is discussed next. The distributional effects of MSP are then an important aspect of the outcome evaluation of MSP.

Table 8.2
Evaluating the participatory process

Phase I: Why, who, when and how; costs of participation	
Why?	Reasons to adopt stakeholder participation
Who?	Stakeholder analyses
	Sectors and categories involved
	Sampling strategy adopted
	Any prioritisation of stakeholders/representatives
When?	Stakeholder engagement during normative planning phase
	Stakeholder engagement during strategic planning phase
	Stakeholder engagement during operational planning phase
How?	Responsibility for stakeholder engagement
	Participation strategies
	Methods of engagement
Cost	How long was the process of stakeholder participation?
	What were the expenses related to the participatory process?
	How much did the participatory process cost?
	Who paid for the participatory process?

Evaluating the participatory process Phase II: Consequences and social acceptance
Did the participatory process increase social capital among stakeholders?
Did the participatory process increase understanding and support of MSP; was it considered to be a good process of ocean governance?
Did the pool of engaged stakeholders/representatives reflect accurately the diversity of actors in the region?
Did the participatory process ensure a balance of power among stakeholders?
Did stakeholders believe they were able to influence the process, thereby supporting the final marine spatial plan and remaining willing to engage?
Did stakeholders define and shape the drivers of the MSP process?
Did the participatory process balance both top-down and bottom-up approaches, resulting in shared decision-making?
Was the information about the MSP process open to stakeholders?
What were the barriers to collaboration among different sectors and categories of stakeholders?
Were stakeholders able to negotiate their interests and ensure that at least some of the benefits of the marine spatial plan applied to them?
Did powerful stakeholders finance and influence the participatory process?
Were the time and cost allocated to stakeholder participation reflected in wider support for the final marine spatial plan?

Source: Quesada-Silva et al., 2019.

8.2 Evaluating the plan and its relevance

Another example of a useful method that focuses on the planning phase is the assessment of the plan's relevance, which concentrates on the draft marine spatial plan by assessing which outcomes are realistic and whether they correspond with the goals set for the plan. During this stage, it is also important to pay attention to possible side-effects. This type of evaluation is sometimes called *ex ante* evaluation. Strategic environmental assessment is another example of an anticipatory evaluation (see **Section 6.5**).

This process should enable successive drafts to be refined and improved, so that the plan is more likely to achieve its objectives in a cost-effective manner. This will also give information that can help in fine tuning the planned monitoring and evaluation activities, ensuring that all necessary information is available.

An anticipatory evaluation is typically conducted by external consultants, but the MSP authority may also be required to provide information and answer questions (see **Box 8.1**). Since MSP addresses multiple sectors and topics, it is essential to engage a broad range of people with relevant expertise and understanding of the factors that influence developments at sea, and how impacts and possible side-effects of MSP are generated. These people can be from sectoral or regional administration, the private sector, NGOs, communities or academia.

Formulating plausible steps from the plan to expected effects can be a useful method to identify the effects. In doing this, it is valuable to pay attention also to side-effects and possible bottlenecks.

The following scheme (**Figure 8.1**) describes the basic concept where the 'Intervention' is the marine spatial plan and planning provisions given in it (allocation of space and conditions for the use of the space). The initial and intermediate outcomes can help in identification of necessary steps towards the objective – the long-term outcomes. Questions in the scheme help in formulation of the plausible steps.

It is advisable to describe the expected environmental, economic and social impacts, as well as the side-effects, and to systematically map who the affected parties are and how they are affected. The identification of factors that influence the development, impacts and side-effects can help to establish quantitative or qualitative indicators for monitoring the marine spatial plan. Finally, constructing descriptions of plausible steps together with experts and stakeholders increases their knowledge of the plan and expected actions. At best, it can create a sense of shared ownership of the marine spatial plan.

Box 8.1

Examples of criteria and questions for evaluating the relevance of the marine spatial plan

Relevance:
Does the marine spatial plan address the right questions?

- Have the existing and future conditions been diagnosed correctly? (see **Sections 5.2** and **5.3**, respectively)
- Conduct a SWOT analysis and identify in particular which of the opportunities and strengths can be influenced by MSP
- Examine the analysis of future trends and scenario analysis
- Engage stakeholders and sector experts who have valuable information on the sectors' current and future conditions
- Do the contents of the agreed MSP objectives and draft planning decisions correspond with the results of the SWOT and trends analyses? Do they cover the major issues?

Consistency:
Is the marine spatial plan aligned with the pre-existing commitments?

- Do the MSP documents identify all the relevant regional, national and international commitments that cover the topics addressed in the marine spatial plan? (see **Sections 3.2 and 3.3** on pre-existing national and international political commitments)
- Are MSP objectives in line with the pre-existing regional, national and international commitments?

(Anticipated) effectiveness:
What are the expected outcomes (and side-effects) of the MSP?

- Are there clear objectives for the MSP to guide the planning?
- Can the objectives be realistically achieved through the marine spatial plan (within the constraints of the budget)?
- Together with stakeholders and sectoral experts, develop descriptions of plausible steps (intervention logic) from the draft plan to the preferred outcomes (objectives)
- Identify possible side-effects and distribution of positive and detrimental impacts across the sectors and groups of people (including regional differences). This will contribute to fostering social justice

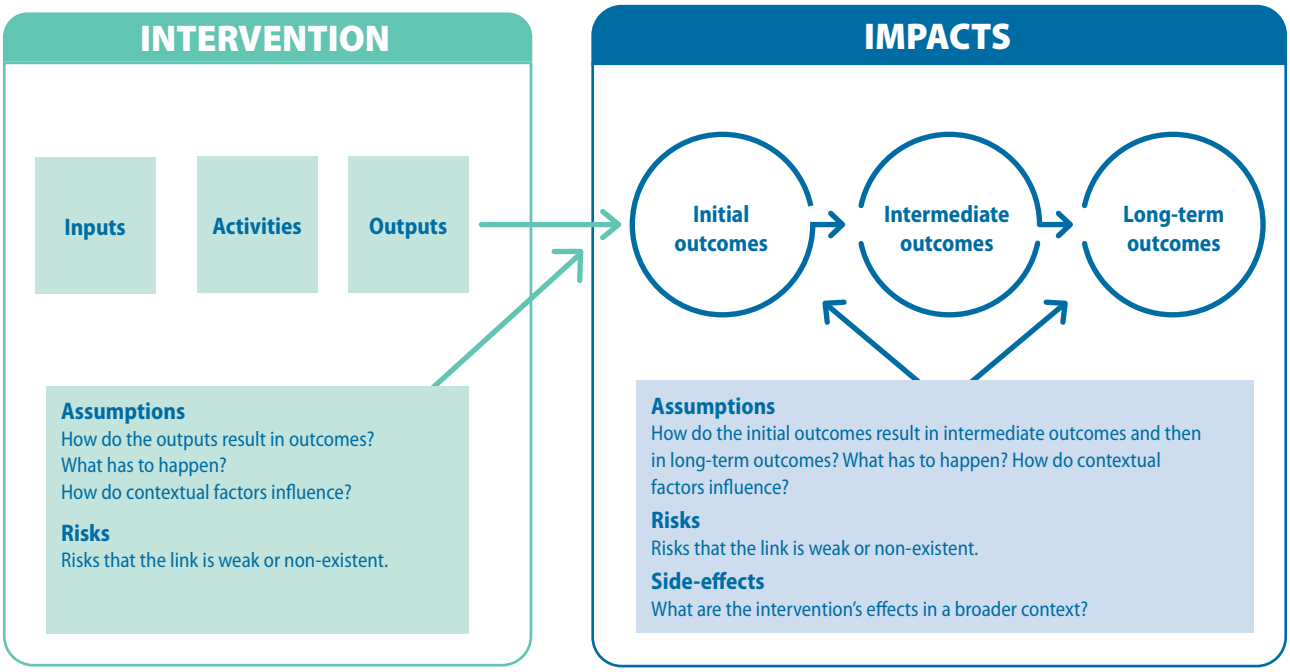

Figure 8.1
Formulating plausible steps

Source: Varjopuro, 2019.

Table 8.3
Plausible steps to reach the wind energy target, and respective evaluative questions

Objective	Increase production of renewable energy at sea by 5 GW by 2030	Examples of evaluative questions
Planning decision (output)	Areas designated for wind energy production at sea Cable routings defined in the plan Requirements and conditions for wind energy in designated areas are given in the planning documents	• Is the area sufficient to reach the target? • Are the areas for wind energy or cable routings feasible? • What are the conceivable impacts on marine environment, species and habitats – as well as to other sea uses?
Immediate outcomes	Knowledge among the renewable energy operators (and other actors) increases on the availability of space, conditions set for the development of the areas, target values Interest to build more wind energy capacity at sea increases	• Is the information reaching the target groups and all anticipated affected parties? • Are companies and other actors (including authorities) showing interest or concern? • Which other factors may support or hinder the preferred development?
Intermediate outcomes	Permit applications are submitted to the authorities Permits are issued *Note:* there is likely to be a considerable time-lag between these two intermediate outcomes	• Are permit applications submitted? • Are stakeholder groups mobilised to support or to oppose the development? • What sort of permits are issued? Do they match with the target and the planning provisions? • Which other factors may support or hinder the development? • Are there side-effects or unintended consequences? • Who is affected and how?
Long-term outcomes	The turbines are ready and produce renewable energy	• How much electricity is produced? Does it meet the target? • What are the environmental, economic and social impacts? • Which other factors supported or hindered the development? • Are there side-effects or unintended consequences? • Who is affected and how? (distributional effects)

Note: The evaluative questions relate to evaluation of the plan (output) as well as to the evaluation of implementation (**Section 8.3**) and evaluation of outcomes (**Section 8.4**).
Source: Varjopuro et al., 2019.

Experts and stakeholders involved in formulation of the plausible steps may have justifiably different views of how MSP will influence sectors or the marine environment and what impacts can be generated. In such cases, it is advisable to produce a limited number of alternative descriptions of the steps towards the objectives. Having alternative plausible descriptions can help to deal with uncertainties when the implementation of MSP is followed up. When available, the expert assessments should be scrutinised for plausibility against statistical information, scientific knowledge and proven theories, and should be as robust as possible.

The plausible steps from the plan to outcomes can be drawn up in various ways or combinations of them:

- Narrative: A storyline that describes the plausible steps
- Graph: The plausible steps can be visualised with a cognitive map

When presenting the plausible steps, it is important to justify them and explain key assumptions as to why the plan is expected to produce the outcomes, and the factors and relationships that generate or hinder the achievement of those outcomes.

Table 8.3 shows a simplified scheme of plausible steps from a planning decision to preferred outcomes (for wind energy production), with examples of evaluative questions to be discussed with experts and stakeholders. Similar questions can be rephrased in the past tense for an outcome evaluation.

8.3 Evaluating implementation

Implementation is a long process (see **Chapter 7**), where actions are often taken by sector authorities and private actors, while the roles of the MSP authorities are limited to coordination and follow up. MSP authorities can also invest in outreach activities to keep the relevant actors informed about the marine spatial plan.

Review cycles of marine spatial plans can be relatively long – from 5 to 10 years, or even more. It is therefore advisable to follow up the implementation of the plan as it advances, and not just the achievement of the preferred outcomes. A mid-term evaluation is needed, especially if the review cycle is very long. It is an opportunity to check that the steps towards the final outcomes are being taken, and to report back. Here, the plausible steps and pathways towards the outcomes, as well as the indicators formulated earlier, provide the checkpoints (see **Table 8.3**). Predefined indicators for immediate and intermediate outcomes will help the mid-term evaluation significantly, making it more transparent and robust.

Some countries, such as Belgium and Latvia, have ensured that an inter-agency working group or committee meets annually to check how the implementation is progressing. To facilitate the process, they have developed tables that have the following similar elements:

- measures to be taken or results to be achieved
- relevant indicator(s)
- a responsible authority
- a year of completion

Furthermore, Belgium has organised stakeholder events to collect feedback from a broad range of actors on the implementation and effects of the marine spatial plan. This was in addition to the formal inter-agency follow-up.

It is advisable that countries hold regular conferences for authorities and stakeholders to discuss the implementation and effects of the marine spatial plans. This would provide an opportunity for a two-way exchange of information and would also keep the relevant actors informed of the plan and its implementation. Such conferences on implementation and follow-up could also be organised on a regional sea level.

Finally, it is important that the mid-term evaluation or follow-up activities look beyond the marine spatial plan itself: How are the maritime sectors and the state of the marine environment evolving? Is the plan still relevant after a few years? If the review cycle is several years, significant changes may take place. Information about the development of the sectors and the state of the marine environment can be obtained from respective authorities and experts. The purpose of context indicators is to follow these developments and to add transparency and robustness to the evaluation process.

Box 8.2

The challenge of isolating the effects of MSP

To reach its objectives, MSP aims to generate preferred changes in the use of sea areas. In order to draw conclusions about the effectiveness of MSP, the competent authority or the evaluator needs to know and prove that MSP is causing, or at least contributing to, the observed changes in the use of a sea area. The challenge here is that MSP operates in a societal and natural environment that is affected by various anthropogenic and natural processes. For instance, development of economic activities at seas is influenced by a number of factors, including economic drivers (demand and supply and their alternatives), technological development, sectoral policies, societal preferences, and by MSP itself. How, then, can we distinguish the effects of MSP from other factors?

Source: Carneiro, 2013.

8.4 Evaluating the results of MSP – the outcome evaluation

MSP aims to achieve certain objectives set in advance – the focus of the outcome evaluation is to check to which extent the objectives were met. In addition, the outcome evaluation could identify side-effects and analyse how the positive and negative outcomes are distributed among the actors. The latter is important from the social justice perspective.

In order to evaluate the achievement of stated objectives, it is vital that clear objectives are formulated at the beginning. The objectives should be realistic, clearly defined and verifiable, as discussed in Section 4. Qualitative and quantitative indicators, when clearly linked to the objectives, are helpful in the outcome evaluation.

As the implementation phase of MSP is usually several years long and many developments at sea take a long time to realise, it is useful to think of the outcome evaluation as steps towards the final outcomes. Evaluation of the outcomes can be sequenced to immediate, intermediate and long-term outcomes as shown in **Table 8.3**. This way, you can check that your MSP implementation is on the right track towards the objectives (i.e. the long-term outcomes).

Even when the plan has clear and verifiable objectives and suitable indicators are established, you should pay attention to the challenge of knowing the exact outcome of the MSP. The challenge applies especially to marine spatial plans that cover multiple sectors and large areas, and when the plan is not very detailed.

Regularly consulting the sectoral administration and experts can help in reducing the uncertainty of knowing how much the marine spatial plan itself influenced the observed outcomes in relation to other contributing factors. The 'plausible steps from the plan to preferred outcomes', proposed in **Table 8.3**, can help in this. The outcome evaluation is an opportunity to collect evidence to test whether the implementation of the plan evolved as anticipated (and why), and whether the anticipated results were achieved. Input from experts and stakeholders can also be collected in stakeholder events.

A planning process can be considered successful or effective when the marine spatial plan is frequently used or consulted in the decision-making process of sectors. This can be anticipated and described as 'intermediate outcomes' in the descriptions of the steps. And the outcomes may in fact be different from the stated objectives, if potential deviations can be justified in relation to the broad principles and goals of the plan.

8.5 Reporting and using the evaluation and monitoring results

This guidance suggests that monitoring and evaluation should address different phases of the planning process and be active throughout the planning process. The results will therefore be reported in various phases as illustrated in **Figure 8.2**.

Communication of the evaluation results works best when the messages are limited to a few key ones and they are communicated at a language level to suit the audience. Reporting the results in different phases, rather than as one final evaluation report, helps in the targeting of the messages.

Using multiple channels for communicating the evaluation is a way to ensure a good outreach. Summary papers online and given directly to decision-makers is an effective way of doing this. Stakeholder events are another means of reaching a number of key actors at the same time, and also demonstrate how MSP has affected all actors and sectors.

It should be noted that there may be legal requirements for communicating evaluation results, for instance the maximum time for delivering the evaluation may be stipulated.

8.6 Adaptation: Review and revision of the plan

MSP is a continual process, not a one-off 'master plan'. An adaptive approach is indispensable in order to deal with existing and future uncertainties, and to incorporate various types of change, including climate change. Planning cycles typically stretch over several years, during which time changes in the environment, governance, technology, society and economy will inevitably take place. Furthermore, the marine spatial plan itself aims to enact changes in the use of the sea areas. It is therefore wise to conceive of MSP taking place in a dynamic world, where the context of MSP is in constant flux.

Marine spatial plans must be modified to respond to these changes or they quickly become ineffective, uneconomic, infeasible and – ultimately – irrelevant (IOC-UNESCO, 2009). This is what the review and revision of the plan tries to avoid, but lessons learned from building and implementing the plan also give valuable information on how to improve the practices and processes of plan design. Finally, new societal needs and aspirations may emerge and adaptive MSP can be a process to respond to some of them.

Figure 8.2 gives an overview of monitoring, evaluation and adaptation activities in relation to each stage of planning. Monitoring is a continuous process, and evaluation should not be a one-off activity at the end of the planning cycle. In the review period, many of the planning stages need to be revisited, including updates on the diagnoses of existing and future conditions, in order to ensure the relevance of the new, updated marine spatial plan.

Table 8.4
Checklist for reviewing and revision

Collect results of the existing plan	• Monitoring and evaluation of results. Check status of the key indicators to see if the plan is on the right track. If not, why? • How has MSP influenced maritime sectors and decision-making? • How was the plan used to inform decision-making about development proposals? • How did proposals show compliance with the plan? • Are we on the right track in relation to the objectives? • Equity and adequacy of the process • What is the perception of different stakeholders about the existing process? • Was the budget sufficient?
Revisit the existing conditions	• How have the maritime sectors, communities and the environment changed? • Have there been major policy reviews (e.g. in sectors) or new commitments, including international? • What is the general context of the planning area (e.g. in environment, governance, technology, economy)? • Improve database and analytical methods
Revisit the future conditions and objectives	• What are the new and emerging needs? • Update the vision and specific objectives
Revisit the scope of pre-planning	• Update the vision and specific objectives • New time frame • Do the boundaries need to be rethought? • Adequacy of the team • Reorganise the planning process
Update the marine spatial plan ***Note:*** This is the final part of the review – all other parts should feed into this	• Indicate clearly which spatial policies / requirements / zones are obsolete or are no longer considered. Likewise, clearly indicate new zones or spatial policies • Update the marine spatial plan to respond to both new needs and lessons from the implementation of the previous plan(s) • Improve plan-making practices

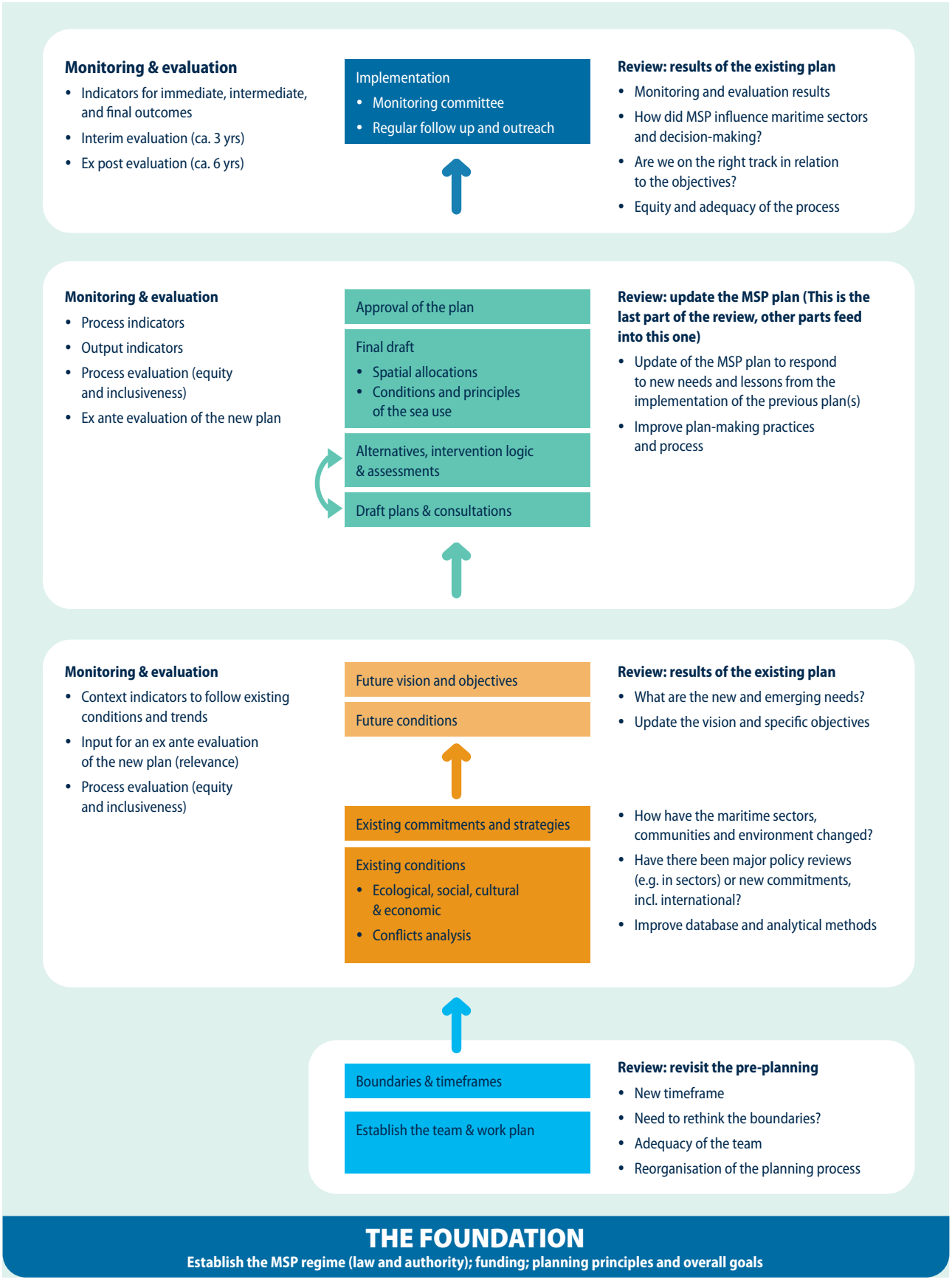

Figure 8.2
Monitoring, evaluation and adaptation overview

Source: Varjopuro, 2021.

9 Next steps

A decade for optimism

1st January 2031 will be a time to look back and remember what the international community have experienced during the previous decade. The decade 2021-2030 began with a confined world in which all citizens of the world learned to live differently. During a couple of months, the ocean pollution decreased, many forests and mangroves recovered and atmospheric CO_2 was reduced to unexpected levels, at least for a short period.

Today, it is not possible to predict what will happen in ten years' time, but what has changed in the last years will undoubtedly help to rethink how the future is to be designed. The concept of globalisation is now better understood around the world, with its pros and cons, and with it, the global effects of each and every one of our decisions, including those adopted in the context of MSP processes.

With an agenda to fill this decade with optimism, governments, researchers, students, the private sectors and citizens from all countries of the world are invited to implement the different Sustainable Development Goals of the 2030 Agenda and their corresponding targets. Their contributions will be reinforced for the common good by all the actions contemplated at the international level by the United Nations Decades of Ocean Science for Sustainable Development and on Ecosystem Restoration.

Developing and implementing marine spatial plans

MSP is designed in all regions across the world as a practical tool to promote a more inclusive and rational use of the ocean. It also plays an important role in facilitating the rapid and environmentally sound development of ocean-based activities and the sustainable development of the blue economy.

In the context of increasingly crowded ocean spaces, MSP is currently encouraging multiple uses. The marine spatial plans, with their goal of integration and legal certainty, allow to identify sites for new and emerging uses, thereby increasing investor confidence and promoting investment in science, innovation and technologies.

In the coming years, more than fifty countries will have approved marine spatial plans covering their respective maritime jurisdictions. If countries' commitment remains intact, the number of countries with an MSP plan by 2030 is expected to be close to one hundred, thus a sign that the target of the European Commission and IOC-UNESCO's Joint Roadmap to accelerate MSP processes worldwide will be met, and hopefully beyond. By then, 30% of the world's exclusive economic zones will be covered with a plan approved by their governments and under implementation. Furthermore, recent commitments made by governments on sustainable ocean planning in the context of the High-Level Panel on Ocean Sustainability confirms the interest of countries to initiate or strengthen MSP processes worldwide.

The implementation of MSP plans will be key to the efficient development of sustainable blue economy strategies; it will deepen the understanding of the current state, trends and future prospects of the marine environment, and strengthen the integration of sectoral policies.

Many of the countries that have approved or are currently in the process of approving their plans will, over the next ten years, consider the need to review, update or adapt their plan to meet changing needs and priorities. The role of marine

regions and regional seas conventions will be crucial in ensuring that each of these changes also serves to strengthen transboundary cooperation amongst countries and considers those measures that impact the marine environment.

The exponential evolution of MSP

Looking back, it all started at the turn of the millennium, in a decade (2001-2010) in which only a few countries had started their journey with their first MSP plans. Countries such as Australia, Belgium, China and the Netherlands or cases like Rhode Island in the United States undoubtedly were precursors and helped ensure that two decades later, these are still a reference today because of the challenges and experiences they accumulated, shared and from which the global MSP community of practice has learned from.

It is worth highlighting the milestone of UNESCO-IOC's MSP guide with its step-by-step methodology in 2009, which today, available in a multilingual version, continues to be a source of inspiration for many countries and territories around the world.

The following decade (2011-2020) would intensify MSP implementation in all regions of the world, methodological guides would multiply and exploratory and pilot projects would be implemented in the most remote places of the ocean. In these last ten years, the vast majority of the world's countries organised at least one technical meeting, or participated in activities related to MSP in an intergovernmental context.

This evolution generated massive actions worldwide and the development of projects related to MSP from different sectoral perspectives. At the same time, this gave the MSP community many lessons, for the countries and all the actors involved. Indeed, one clear lesson from these experiences highlights the importance of working with competent national authorities and having full institutional support in order to achieve impactful MSP implementation.

The reference to the support of national authorities is emphasised because capacities in each country have been increasing steadily. At national and regional level, universities and research centres designed opportunities for inter-university collaboration to promote more efficient ocean governance through MSP. Their contribution to our understanding of MSP inspired many generations of students choosing to specialise in MSP. Among many other university courses, the Erasmus Mundus programmes and the World Maritime University have trained hundreds of students from Africa, Asia, America, Europe and the wider Pacific. Their alumni are now leading professionals working for national planning authorities, regional conventions, the European Commission or the United Nations, or in key maritime sectors in their respective countries and regions. This training and knowledge generated at the individual and institutional level is there to be used.

This new guide has benefitted from the contribution of thousands of people from more than 140 countries. For the first time ever, MSP experiences and lessons learned from "as many countries as possible" allowed us to access the most extensive variety of inputs and to have a more holistic vision on the status of MSP worldwide. As such, this is a valuable contribution to the objectives of the Joint roadmap.

Towards a sustainable and responsible planning

MSP, like any other discipline, requires real and effective actions. It means sharing knowledge globally without excluding anyone, sharing efforts at national and regional level, sharing data and information amongst countries, sharing experiences of those who are not only engaged in designing the theory of planning, but who are involved in the daily action of how planning processes are implemented in a country, how much time it takes or how much money it costs to realise all its objectives.

Countries intending to initiate an MSP process during this next decade should be aware that the human potential and resources a government needs to implement MSP processes are already available in their own countries, universities, private companies or amongst their citizens.

As with everything in life, it is not a question of quantity. What showed to be relevant in all MSP processes is perseverance, commitment, political will and leadership. This requires national empowerment in the design of their own future and the conviction that the process is public, participatory and socially just for their citizens, all of whom are consumers, workers or representatives of every maritime sector whose uses are to be planned for the benefit of all.

Looking to the future, many countries and regions adopted sustainability-based policies long before the 2030 Agenda was launched, although there is no doubt that the 17 Sustainable Development Goals provide a much-welcomed global framework for all nations. In effect, the contribution of MSP goes well beyond the scope of SDG 14 on the ocean, as its benefits address food security, resilience, biodiversity, economic growth, gender issues amongst a few. Articulating these contributions to other SDG dimensions remains work ahead.

The United Nations Decades of Ocean Science for Sustainable Development and on Ecosystem Restoration will be the framework in which many solutions and new actions will be designed and implemented this decade or in the post-2030 period. To guide and inform MSP implementation, priority knowledge gaps of marine ecosystems, and their reactions to multiple stressors, will need to be filled. This is particularly true where multiple human stressors interact with climate change, including acidification and temperature increase. Such knowledge will be critical to develop MSP tools that build resilience, recognise thresholds and avoid ecological tipping points, and thus, ensure ecosystem functioning and continued delivery of ecosystem services for the health and wellbeing of society and the planet as a whole.

A further milestone for many regional policies and agendas will be the year 2050. The African Union adopted in 2012 the "2050 Africa's Integrated Maritime Strategy" as a major milestone in the continent's maritime history. Its strategic objectives are fully in line with those shared by MSP, and sectoral integration is extended to all sectors of society. MSP is presented as a policy process to ensure that marine space and resources are used efficiently and sustainably; MSP requires a framework where decisions can be taken, based on sound data and in-depth knowledge of the sea and inland water ways. The Strategy incorporates MSP for investors to have greater legal certainty, encouraging Africa's blue economic development. This, in turn, will contribute to the achievement of Agenda 2063, which defines Africa's blueprint and master plan for transforming the continent into the global powerhouse of the future.

In the case of the European Union, 2050 represents the year in which the goal of a climate-neutral economy must be met, by implementing the European Green Deal, which aims to decouple economic growth from resource use and to ensure that no one is left behind. The ocean-related priorities and the development of sustainable blue sectors will benefit from all European maritime spatial plans and their own adaptations to protect biodiversity and ecosystems; enabling sustainable maritime activities (e.g. offshore renewable energy, aquaculture, clean shipping, ports, fisheries, etc.) while improving water management and moving towards a circular economy.

Pacific leaders also recognise, in the context of the 2050 Strategy for the Blue Pacific Continent, that building a strong and resilient Pacific requires careful planning, including marine planning, to ensure social, cultural, environmental and economic integrity. This Strategy 2050 is envisioned as the workspace for working together as one Pacific Blue Continent, and only then will it come to fruition. The first steps taken are already providing greater knowledge about the vast ocean in each of their national jurisdictions and Small Island Developing States in the region are collectively deciding on actions to be taken over the next 30 years to protect and secure the people, place and prospects of the Pacific in which they live.

These are just a few examples that demonstrate the existing individual and collective ambition and leadership towards sustainability. All kinds of actions that are now being implemented in all countries will serve to accomplish the common goals and thus be able to celebrate in 2031, the results of a decade full of successful decisions.

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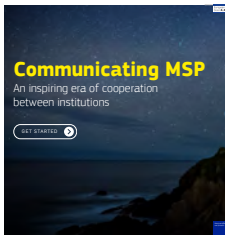
Complementary resources



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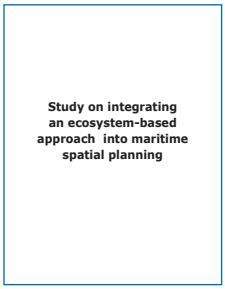

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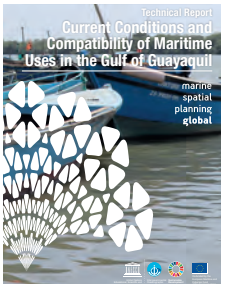

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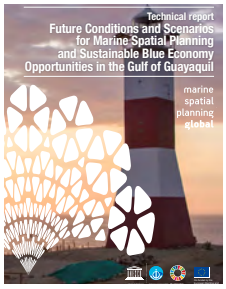

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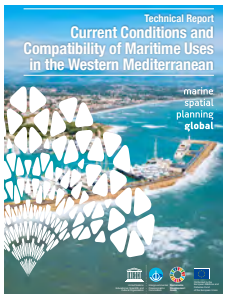

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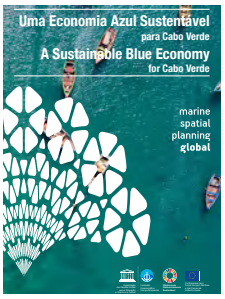

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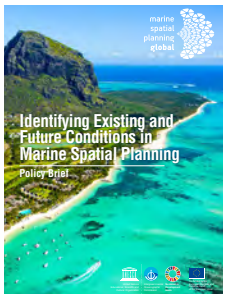

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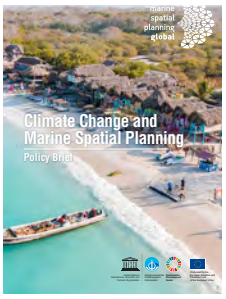

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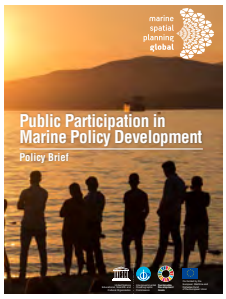

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International Guide on Marine/ Maritime Spatial Planning

More and more countries worldwide are moving away from isolated sectoral management to an integrated planning framework for their maritime jurisdiction, aiming to reduce conflicts and encourage coexistence and synergies among different stakeholders. In that respect, marine/maritime spatial planning (MSP) has emerged as an essential tool for promoting a more inclusive, rational and sustainable use of the ocean, shaping the future of international ocean governance.

This new international guide, produced jointly by the Intergovernmental Oceanographic Commission of UNESCO and the Directorate-General for Maritime Affairs and Fisheries of the European Commission, draws on the expertise and experience accumulated in the last decade on technical, practical and conceptual aspects of MSP to assist governments, partners and practitioners in their MSP processes. A wide diversity of topics, case studies and actions are presented for users to reflect upon, adapt to their own context and put into practice.

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