

Integrated ocean policy

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1.1 An integrated global ocean policy

1.1.1 The Agenda 2030: a global policy for sustainable development

Twenty years after the first 'Earth Summit/United Nations Conference on Environment and Development' (UNCED, Rio de Janeiro, 1992) resulted in the *Agenda 21*, the UN set the scene for a new Global Agenda for Sustainable Development known as *Rio+20* (2012). In September 2015 the UN General Assembly (UNGA) adopted the resolution 'Transforming our world: the 2030 Agenda for Sustainable Development' (figure 1). *Agenda 2030* contains 17 Sustainable Development Goals (SDGs) with 169 targets covering a broad range of SD issues, from ending poverty and hunger, improving health and development, making cities more sustainable and environmentally friendly, and combating conflict and climate change (*UN Resolution A/RES/70/1*). Through Agenda 2030, world leaders pledged for common action in pursuit of a universal SD policy agenda. The Agenda recognises that climate change is one of the greatest challenges of our time and that increases in global temperature, sea-level rise, ocean acidification, and other impacts are seriously affecting coastal areas, especially in low-lying coastal countries (*SDG13*). *SDG14* aims to 'conserve and sustainably use the oceans, seas and marine resources for sustainable development'. The 10 targets of *SDG14* focus *inter alia* on the reduction of marine pollution and ocean acidification, the conservation and restoration of marine and coastal ecosystems, the ending of illegal, unreported and unregulated fishing (IUU) and perverse subsidies and the development of marine science capacity and technology transfer.

Sustainable development is inseparable from the health of the Global Ocean. In addition to the *SDG14* targets, several other SDGs cannot be achieved without aiming for a healthy ocean and coastal areas in view of the many ecosystem services that they provide (*Singh et al. 2018*). The ocean plays a crucial role in the climate system as it provides so called 'silent' ecosystem services (*Stocker 2015*) in buffering the impact of substances (such as CO₂) and energy (solar radiation) that contribute to global climate change (*SDG13*). The ocean has so far taken up over 90% of the excess energy in the climate system and has absorbed approximately 30% of the CO₂ emitted by society. The impact of this carbon uptake is ocean acidification, which is already affecting life in the ocean even at great depths (*Stocker 2015*). The *SDG* target 14.3 calls for minimising and addressing impacts of ocean acidification, e.g. through enhanced scientific cooperation at all levels (*UN 2015*). The Paris Agreement, adopted in 2015, was the first of the Conference of the Parties to the UN Framework Convention on Climate Change (*UNFCCC*) to acknowledge the intrinsic connection between Climate and the Ocean (*UN 2015*). The *UNFCCC* is crucial in addressing this Ocean-Climate nexus in support of the Agenda 2030.

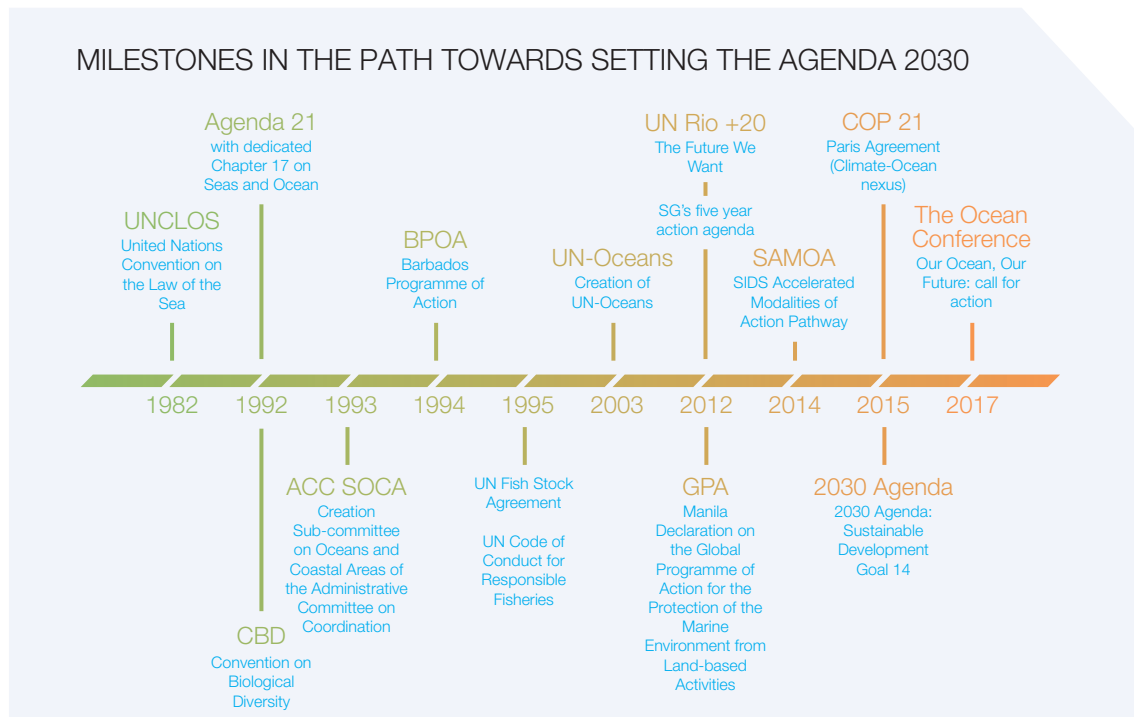


Figure 1. Milestones in the path towards setting the Agenda 2030.

1.1.2 UN framework and its integrated sustainable agenda for the global ocean

UN-OCEANS: INTER-AGENCY COORDINATION MECHANISM

In 1993, the UN agencies dealing with oceans and coastal issues formed the Sub-committee on Oceans and Coastal Areas of the Administrative Committee on Coordination ([ACC SOCA](#)), in support of the 'Ocean'-chapter ([Chapter 17](#)) of the Agenda 21. In 2003, [UN-Oceans](#) was established as a UN inter-agency coordinating mechanism to enhance the coordination, coherence and effectiveness of competent organisations of the UN-system in ocean related matters (figure 2). The Terms of References of UN-Oceans were revised in 2013 ([UN Resolution A/RES/68/70](#)). The Scientific Advisory Board of the former UN Secretary-General identified eight grand societal challenges, including the need for 'improving ocean science and governance for the development of sustainable ocean knowledge-based economies' (UNESCO 2016).

A widely accepted guiding principle in UN (environmental) agreements such as the Convention on Biological Diversity (1992) is the 'ecosystem-based approach'¹, which considers a healthy ecosystem as a basis for sustainable maritime economic activity, especially in the long term. The ecosystem approach serves as guidance in European (marine) legislation and is transposed at national level.

UN-Oceans provides the Interagency Coordination Mechanism for various ocean related matters. It reports back to the UN General Assembly (UNGA) through the Informal Consultative Process and the Annual Omnibus Resolutions and Annual Reports on Oceans and Seas (figure 2). The following three processes were established under the UNGA:

- The UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea ([the Consultative Process - ICP](#)), established in 2002, as an intergovernmental forum to discuss ocean issues on a yearly basis;
- The Intergovernmental Conference tasked with the development of an international legally binding instrument (ILBI) under the UNCLOS on the conservation and sustainable use of Marine Biological Diversity of Areas Beyond National Jurisdiction ([BBNJ](#)) by 2020, established in 2017 ([UN Resolution A/RES/72/249](#));
- The Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects ([the Regular Process](#)) established in 2004, aims to enhance the scientific basis for policy-making. The First Global Integrated Marine Assessment or World Ocean Assessment (WOA) was completed in 2015. The second WOA ([UN Resolution A/RES/70/235](#)) will cover five years from 2016 to 2020 (UN Resolutions [A/RES/71/257](#) and [A/RES/71/362](#)).

The UN Ocean Conference (New York, June 2017) adopted the intergovernmental agreed political declaration '[Our Ocean, our future: call for action](#)'. This declaration is the summary of seven partnership dialogues and over 1,400 voluntary commitments to advance the implementation of SDG14 and related targets ([UN Resolution A/RES/71/312](#)). In October 2017, Ambassador Peter Thomson of Fiji was appointed as UN SG Special Envoy for the Ocean, to follow up on the outcomes of the UN Ocean Conference and the implementation of the voluntary commitments in support of achieving the SDG14 of the Agenda 2030.

An overview of UN Conventions - including the UN Convention on the Law of the Sea also called the 'Constitution for the oceans' ([UNCLOS 1982](#)) is provided in [Maes et al. \(2013\)](#) and [Verleye et al. \(2018\)](#).

UN OCEAN SCIENCE AGENDA: IOC UNESCO

The Intergovernmental Oceanographic Commission ([IOC](#)) of UNESCO (figures 2 and 3) is the UN body mandated for the global coordination and implementation of programmes for ocean research, observation, exchange of data and information, early warning, sustainable management and capacity development including training.

In 2017, the IOC published the first Global Ocean Science Report ([GOSR](#)), an assessment of the status and trends in ocean science capacity around the world. The report identifies and quantifies the key elements of ocean science at the national, regional and global scales, including workforce, infrastructure and publications.

In December 2017 the UNGA ([UN Resolution A/RES/72/73](#)) proclaimed a global '[UN Decade of Ocean Science for Sustainable Development \(2021-2030\)](#)' as a common framework to ensure that ocean science can support countries in the achievement of the SDG14. Mandated by the UNGA, the IOC of UNESCO will coordinate the Decade's preparatory process (see 1.3.2 EU science and innovation agenda for a sustainable ocean, figure 5).

¹ The OSPAR Convention defines the ecosystem approach as the 'the comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity'.

INTERNATIONAL GOVERNANCE STRUCTURES FOR THE OCEAN - MULTI-SECTORAL APPROACH AND A PLETHORA OF ORGANISATIONS

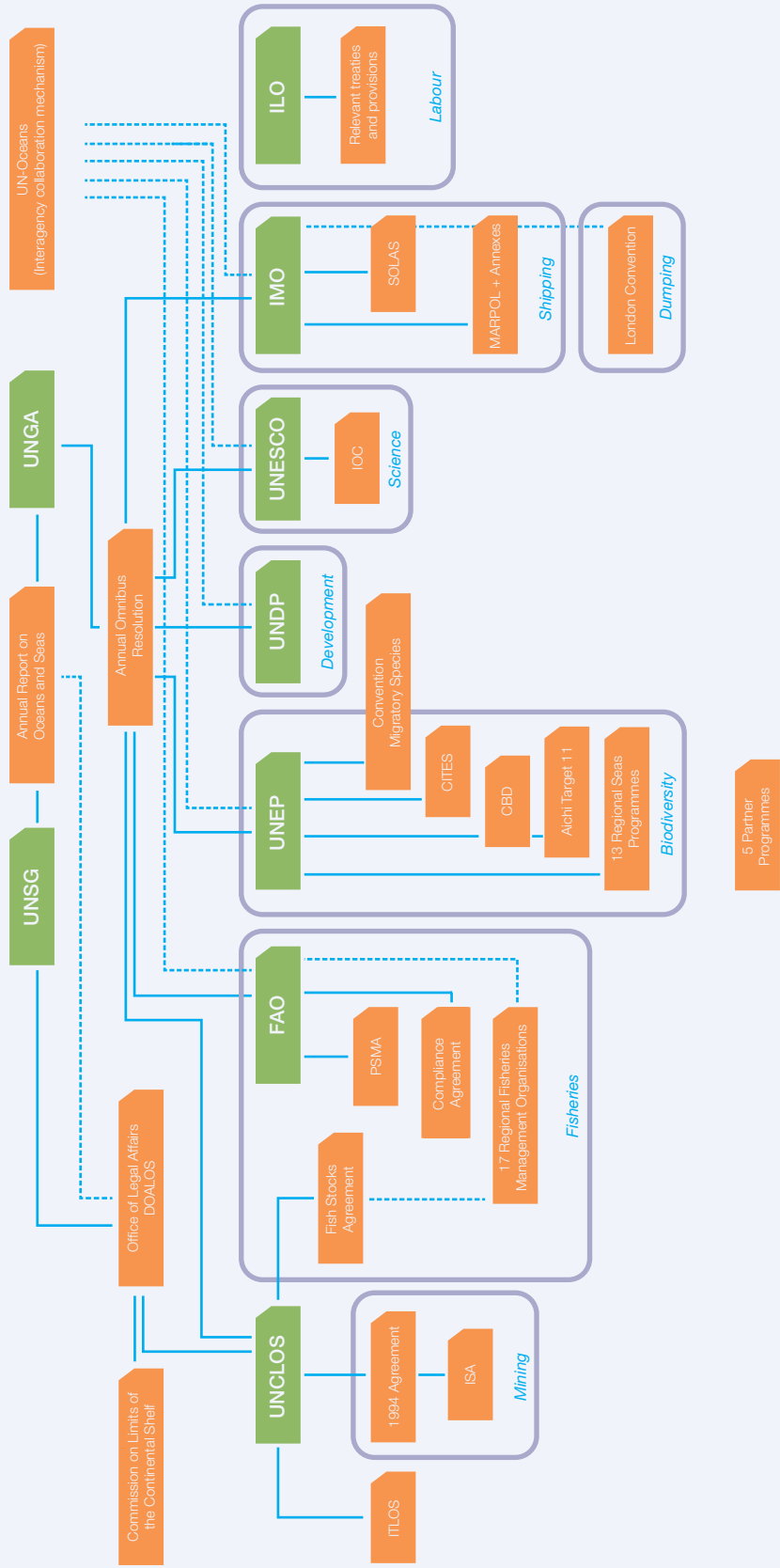


Figure 2. International Governance structures for the ocean (Source: Ocean Atlas 2017).

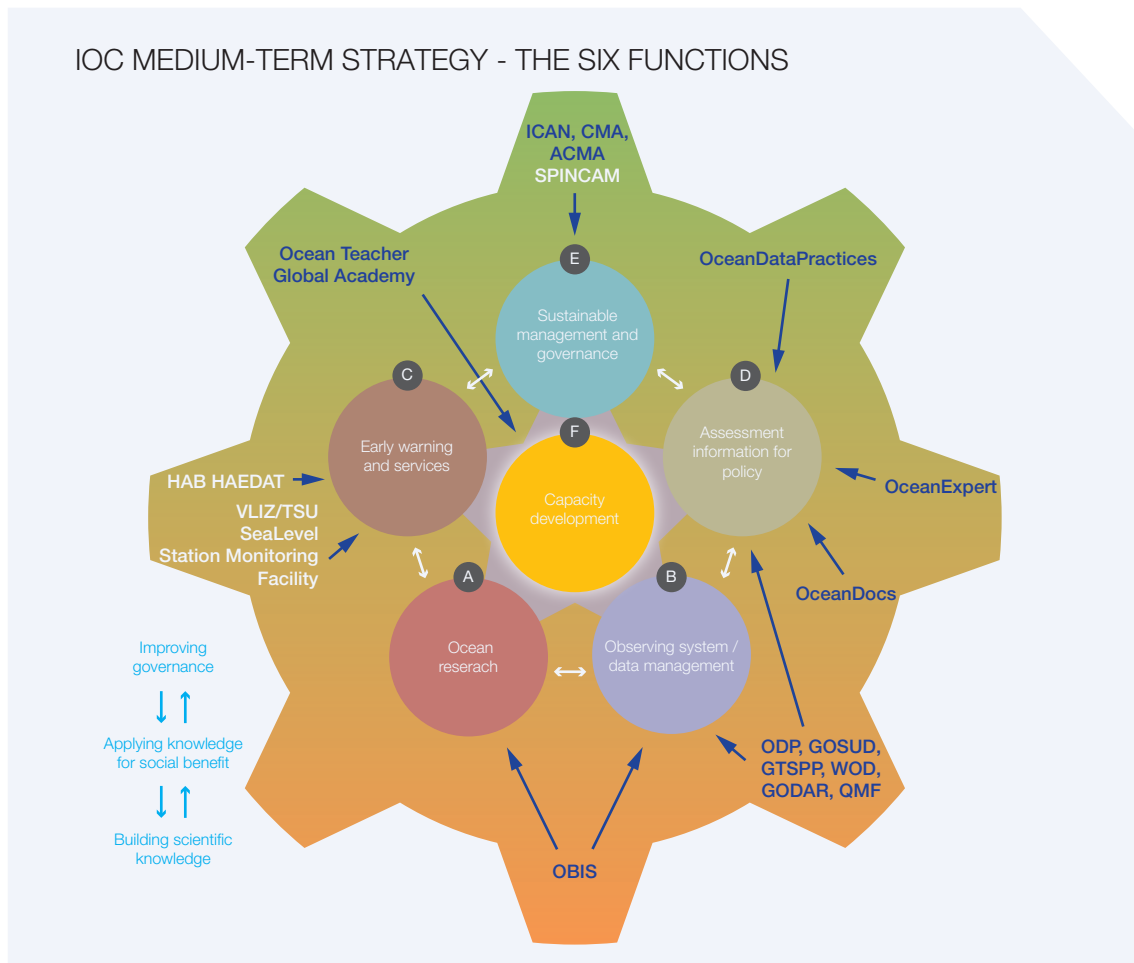


Figure 3. The six main functions in support of IOC-UNESCO *Medium-term Strategy* 2014-2021.

Specific research is conducted in support of the UN organisations responsible for developing policy and regulation e.g. in the domains of fisheries, shipping, nature conservation and biodiversity protection. The recent expansion of maritime activities into the Arctic and the deep-sea frontiers, require addressing important scientific, technical and policy issues. UNCLOS *part XIII* and *part XIV* provide a legal framework for the conduct of marine scientific research and transfer of marine technology.

1.2 Non-UN agreements

1.2.1 Non-UN global and regional conventions

Global, non-UN conventions include the *Ramsar Convention* (1971) and the International Convention for the Regulation of Whaling (*IWC 1946*).

At the regional sea level, fourteen of the Regional Seas Programmes have also adopted legally binding, non-UN conventions, for the protection of the marine environment as part of the regional seas conventions and action plans framework. The four European regional seas conventions include the *Helsinki Convention* (HELCOM) in the Baltic Sea, the *Barcelona Convention* (UNEP-MAP) in the Mediterranean Sea, the *Bucharest Convention* in the Black Sea and the *OSPAR Convention* in the North East Atlantic Ocean, including the North Sea (figure 4).

OSPAR is the mechanism by which 15 Governments and the EU cooperate to protect the marine environment of the North-East Atlantic, including the North Sea (see theme **Nature and environment**). The work of the OSPAR Commission is guided by the principle of the ecosystem approach for the integrated management of human activities in the marine environment. This is supported by an obligation for the contracting parties to apply the precautionary and polluter pays principles and the use of best available techniques (BAT) and best environmental practice (BEP), including clean technology. The OSPAR secretariat also acts as a secretariat for the *Bonn Agreement* (1969), which

REGIONAL SEA CONVENTIONS



Figure 4. (Non-UN) regional seas conventions worldwide (Source: UNEP).

provides a mechanism for the North Sea countries and the EU (the contracting parties) to cooperate in response to pollution in the North Sea area caused by maritime disasters and chronic pollution from ships and offshore installations; and to conduct joint surveillance to assist in the detection and control of marine pollution. In this context, the *Ministerial North Sea Conferences and Declarations* (1984-2006) have carried out joint actions to assess the state of the environment and to set environmental targets as a political basis for establishing measures to reduce contamination in the North Sea.

At international level, the Group of Seven (G7) serves as a forum for highly industrialised democracies to coordinate economic, security and energy policy. The G7 members Canada, France, Germany, Italy, Japan, the United Kingdom and the United States have launched a number of influential communiqués and blueprints that are highly relevant for the ocean, e.g. Tsukuba Declaration (2016), Turin (2017) and the Charlevoix Blueprint (2018) (see 1.3.2 EU science and innovation agenda for a sustainable ocean, figure 5).

1.2.2 Global ocean research cooperation

At the global level, a number of relevant non-UN systems and networks cooperate in support of the sustainable ocean agenda. They represent collaborative efforts in advancing an ocean research agenda and mobilising funding for ocean research. Among the most active are the Partnership for Observation of the Global Oceans (*POGO*), the Platform on Biodiversity and Ecosystem Services (*IPBES*), the *Future Earth Programme* with its science and technology alliance for global sustainability collaboration, the Scientific Committee on Oceanic Research (*SCOR*) (under the International Science Council ISC), the *Belmont Forum* as an international partnership of funding organisations, and the Organisation for Economic Co-operation and Development (*OECD, Future of the Ocean Economy, Innovation in the ocean economy 2017-2018*).

1.3 The European Union

1.3.1 The EU Integrated Maritime Policy

The EU Integrated Maritime Policy (IMP, COM (2007) 575) seeks a coherent approach to all EU marine and maritime issues and increased coordination between policies and policy domains to draw higher returns from the ocean while reducing impacts on the environment. It consists of a number of transversal policy instruments and is coordinated by the Directorate-General for Maritime Affairs and Fisheries (DG MARE).

The EU was a long-standing party to the regional sea conventions around Europe and developed its water policies in interaction with these, mostly Member State driven, organisations. A further strategic step towards a more integrated approach in the management of the marine environment, was taken with the Water Framework Directive (WFD, 2000/60/EC). The WFD is applicable in coastal waters up to 1 nautical mile (NM) seaward from the baseline (i.e. low water mark), for the achieving of a good ecological status, while for certain aspects of chemical water quality it applies to the entire 12 NM territorial sea. The Marine Strategy Framework Directive (MSFD, 2008/56/EC) established a relatively similar integrated management approach to the protection of the marine environment. Member States (MS) have to ensure a good articulation between these two frameworks (MSFD and WFD). The MSFD can be considered as the environmental pillar of the IMP and provides a common framework to establish environmental targets for the protection and conservation of the marine environment. The MSFD aims for a 'good environmental status' (GES) for all seas under the jurisdiction of the Member States by 2020. The ecosystem approach is enshrined within the legal framework of the IMP as a guiding principle for the management of human activities in accordance with the precautionary principle. The MSFD and WFD are complementary to other environmental directives, such as the Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC) (theme **Nature and environment**). Common implementation strategies (CIS) provide a platform for the Member States and EC DG Environment (DG ENV) to coordinate and follow the implementation of these directives.

The Maritime Spatial Planning Directive (MSP, 2014/89/EU) and the Recommendation on integrated coastal zone management (ICZM, 2002/413/EC) are important instruments within the scope of the IMP. The MSP Directive supports the EU blue growth strategy (COM (2012) 494) that contributes to achieving the goals of 'Europe 2020 - A strategy for smart, sustainable and inclusive growth' (COM (2010) 2020). By optimising the use of maritime space, MSP also contributes to a better implementation of EU environmental laws (MSFD, Natura 2000, etc.) by reducing environmental effects.

The 'EU strategy for Marine and Maritime Research' (COM (2008) 534), drafted within the IMP following the Aberdeen Declaration (2007), aims to support the provision of necessary scientific information for improved decision-making in support of the sustainable use of the Ocean and its resources. Since its adoption, the *IMP* has allowed the implementation of actions with a thematic or regional approach (table 1 and figure 5 for the European dimension).

In the North-East Atlantic Ocean a maritime strategy for smart sustainable and inclusive growth ([COM \(2013\) 279](#)) was agreed by Portugal, Spain, France, Ireland and the UK (2011). Cooperation across the North Atlantic was enhanced further by the signing of the [Galway Statement on Atlantic Ocean Cooperation](#) (2013) which established the Atlantic Ocean Research Alliance (*AORA*) between the EU, USA and Canada. The *AORA* aims to increase the collaboration of the partners in topics such as ocean observation in the Atlantic Ocean, including the effects from the nearby Arctic Ocean. The [Belém Statement](#), a joint Declaration between the EU, Brazil and South Africa (July 2017) following the [Galway Statement](#), aims for an integrated approach to research and development across the whole Atlantic Ocean and its bordering countries.

The EU joint communication on international ocean governance for safe, secure, clean and sustainably managed oceans ([JOIN \(2016\) 49](#)) forms part of the EU's response to the UN 2030 Agenda and more specifically for SDG14, and delivers the *EU Global Strategy* in practice. It calls for an improved international ocean governance framework and aims at strengthening international ocean research and data acquisition, sharing and management. The EU policy level has in recent years tried to reinvigorate globally visible actions to protect the ocean. This also generates new impetus for action within the legal frameworks. For instance, in October 2018, the EU hosted the 5th edition of the international [Our Ocean conference](#) in Bali. At this conference the EC announced an additional 300 million euro to fund new initiatives to protect the oceans. This amount is in addition to the 550 million euro announced at the Malta conference a year earlier.

Table 1. Implementation of actions under the European Integrated Maritime Policy (non-exhaustive list).

Actions in the framework of the integrated ocean policy	
Thematic implementation	Commission communication on European Strategy for Marine and Maritime Research (COM(2008) 534)
	Marine Strategy Framework Directive (2008/56/EC)
	Commission communication on offshore wind energy (COM (2008) 768)
	Commission communication on the EU's Maritime Transport policy (COM (2009) 8)
	Communication and action plan establishing a European maritime transport space without barriers (COM (2009) 10)
	Commission communication on Marine Knowledge 2020 (COM (2010) 461)
	EU Sustainable Blue Growth Agenda for the Baltic Sea Region (SWD (2014) 167) adopted by the Commission
	Commission communication on Blue Growth (COM (2012) 494) and innovation in Blue Economy (COM (2014) 254) to release the potential of our seas and oceans for jobs and growth
	Integrated Maritime Surveillance (COM (2009) 538) and Regulation (EU) No 1052/2013 establishing the European Border Surveillance System (Eurosur)
	Directive 2014/89/EU establishing a framework for Maritime Spatial Planning
	Commission communication on the international dimension of the IMP (COM (2009) 536)
	Common Fisheries Policy (CFP) (Regulation (EU) No1380/2013) entered into force 2014.
	Joint Communication on international ocean governance, for safe, secure, clean & sustainably managed oceans (JOIN(2016)49)
Macro-regional sea strategies and action plans	Strategy for the Baltic Sea region (COM (2009) 248)
	Commission communication on IMP for better governance in the Mediterranean (COM (2009) 466)
	EU Strategy for the Black Sea
	Commission communication on a Maritime Strategy for the Atlantic (COM (2011) 782)
	Galway Statement on Atlantic Ocean Cooperation (2013); Atlantic Forum Action Plan (2013)
	Commission communication on the Common Information Sharing Environment (COM (2014) 451)
	EU Strategy for the Adriatic and Ionian Region (COM (2014) 357)
	Joint communication on an integrated European Union policy for the Arctic (JOIN (2016) 21)
Belém Statement (EU, Brazil, South Africa) on Atlantic Research and Innovation Cooperation (2017)	

ROLE OF THE EUROPEAN PARLIAMENT AND COUNCIL

Several EU Parliament committees address maritime policy issues. The Intergroup on 'Seas, rivers, islands and coastal areas' (*SEARICA*) has a membership of more than 80 MEPs from 19 member states working in an integrated manner on specific ocean and coastal topics. While at the European Commission it is DG MARE who ensures a thematic coordination, in the EU Council it is the General Affairs and External Relations Council that has competence on IMP.

1.3.2 EU science and innovation agenda for a sustainable use of the ocean

Science and technological innovation are instrumental to reconcile increasing marine activities with sustainability goals. The EU strategy for Marine and Maritime Research (*COM (2008) 534*), coordinated by the Directorate-General for Research and Innovation (DG R&I), is a reference framework for the integration and gathering of knowledge and coordination of priority research activities. The DG R&I is responsible for EU research and innovation policies and funding instruments, e.g. the current *Framework Programme Horizon 2020* (EU Regulation 1290/2013) (see Indicator Report Marine Research and Innovation 2018, *Pirlet et al. 2018*). It aligns with the EU strategy for economic growth (Europe 2020) and innovation (Innovation Union), one of the seven initiatives within the Europe 2020 Strategy. It highlights the need for new types of governance in the field of research, focusing on a dialogue between scientists, policymakers, industrialists and societal interest groups (the 'quadruple helix'). These elements also form the pillars of the *Ostend Declaration (2010)* and the *Rome Declaration (2014)* and of the implementation and funding mechanisms of EU science policy.

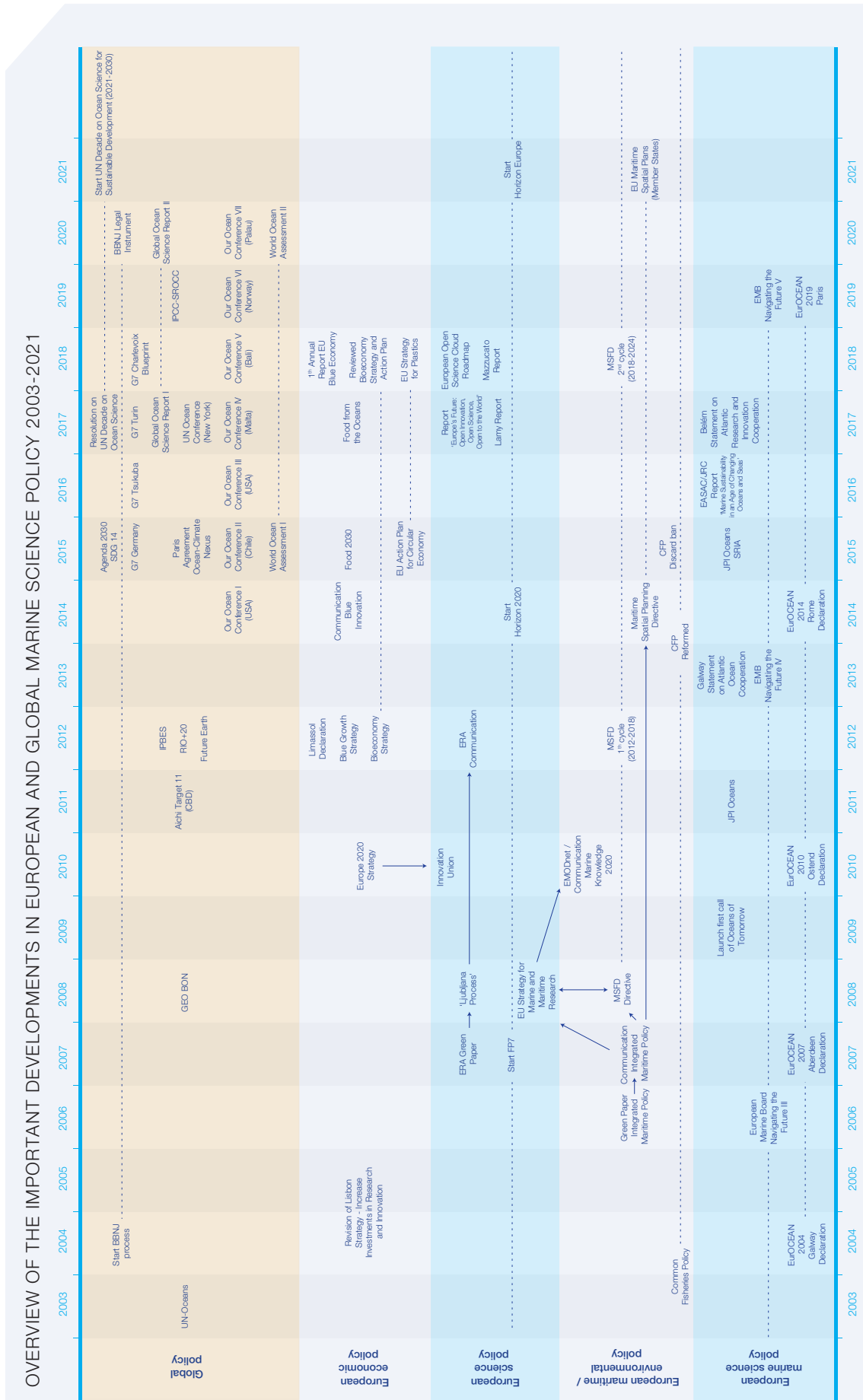


Figure 5. An overview of some of the important developments in European and global maritime/environmental policy and marine science policy between 2003-2021.

STRATEGIC RESEARCH AND INNOVATION AGENDAS IN SUPPORT OF A SUSTAINABLE USE OF THE OCEAN

Ocean research inherently involves high costs and research facilities that are not always accessible to European researchers. Aligning objectives and pooling of available financial resources and capacities facilitates addressing grand societal challenges in a more effective and coordinated way. It stimulates the transfer of scientific information and knowledge towards research and innovative applications (*Navigating the Future IV*, *European Marine Board 2013*, *Rome Declaration 2014*, *Marine Knowledge 2020*). A number of networks and consortia with a strong representation of European marine research communities develop of strategic agendas for sustainably using the ocean (table 2).

In the EU, research agendas are mainly determined at Member State level and 88% of all public investments in research and development (R&D) are designed, financed and evaluated at national or subnational levels (*Acheson et al. 2012*). Joint Programming (JP) offers an integration and coordination platform for EU Member States to align national budgets and resources from research organisations; e.g. by drafting joint research agendas and aligning priorities for cooperation in the long term. Since 2009, 10 Joint Programming Initiatives (JPIs) were launched, including the initiative for ‘Healthy and Productive Seas and Oceans’ - *JPI-Oceans*.

Table 2. Pan-European marine research communities with strategic agendas in support of the Agenda 2030 (non-exhaustive list).

Organisation	Description
European Marine Board (<i>EMB</i>)	Acts as the interface between marine research and marine/maritime policies; delivers <i>Position Papers</i> on research priorities and strategies for European marine research such as <i>Navigating the Future IV</i>
European Ocean Observing System (<i>EOOS</i>)	Coordinating framework to align and integrate Europe’s ocean observing capacity and promote a systematic and collaborative approach to collecting information on the state of the ocean
<i>EurOCEAN conferences</i>	Platform for the marine research-policy interface at the EU level and in Member States, allowing European researchers to participate in shaping the EU marine research agendas through the <i>Galway Declaration (2004)</i> , the <i>Aberdeen Declaration (2007)</i> , the <i>Ostend Declaration (2010)</i> and the <i>Rome Declaration (2014)</i> ; co-organised, in partnership, by the EC and the EMB
<i>JPI-Oceans</i>	Strategic Research and Innovation Agenda 2015-2020 (<i>JPI Oceans 2015</i>)
<i>EFARO</i>	European Fisheries and Aquaculture Research Organisation
<i>EuroGOOS</i>	European Global Ocean Observing System
<i>MARS</i>	European Network of Marine Research Institutes and Stations
<i>ESFRIs</i>	European Strategic Forum for Research Infrastructures, a joint venture between EU and Member States towards strategic planning and investments for research infrastructures. Belgium participates in the EMBRC, LifeWatch and the Ocean Thematic Component (OTC) of the ICOS
<i>ICES</i>	International Council for the Exploration of the Sea, a network of 20 Member States, developing science and advice for the sustainable use of the oceans and advising and informing international commissions (e.g. OSPAR and HELCOM)
<i>ASCOBANS</i>	The Agreement on the Conservation of Small Cetaceans of the Baltic, North-East Atlantic, Irish and North Seas focuses on research and protection of small cetaceans and their habitat
<i>EUROMARINE</i>	The European Marine Research Network
<i>EurOcean</i>	European Centre for information on Marine Science and Technology, develops information databases with a focus on Knowledge Output, Research Infrastructures and Public Outreach and Awareness

Specifically, for the North Sea, no common strategy has been developed yet between the EU and the MS, cf. the ‘macro-regional strategies’ in the framework of the EU regional policy (DG REGIO), or the ‘Sea Basin Strategies’ or ‘Maritime Strategies’ in the framework of the IMP (DG MARE) (Regulation (EU) No 1303/2013).

The *BONUS Joint Research and Development Programme*, based on Article 185 of the Treaty on the Functioning of the EU (TFEU), is designed to meet the research and development needs of the Baltic Sea, and jointly funded by the EU and the involved countries. A collaborative action to expand BONUS in a twinning programme with the North Sea (BANOS CSA) will be launched in November 2018, with support of the EU Horizon 2020 funding programme.

EU INTEGRATION OF MARINE DATA AND INFORMATION COLLECTION FRAMEWORKS

Marine Knowledge 2020 (COM (2010) 461) – a component within the IMP – aims at unlocking marine data from different sources stored in data repositories scattered around Europe to increase efficient access to quality-checked marine data for industry, policy makers, civil society and scientists. The objective is to support the development of new

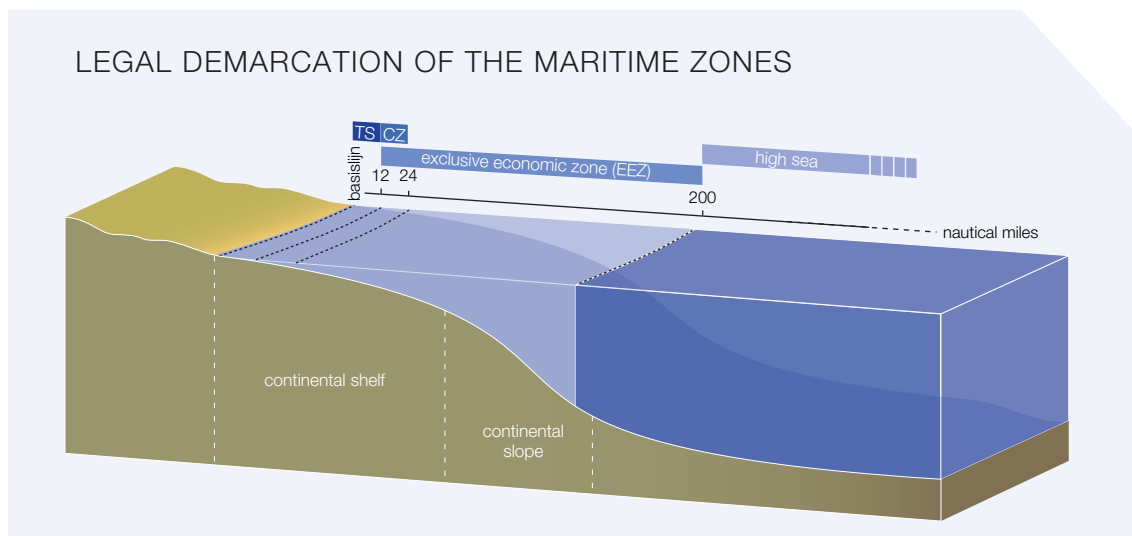


Figure 6. Legal demarcation of the maritime zones, as described in UNCLOS (TS: territorial sea, CZ: contiguous zone).

or improved sustainably sourced products and services, saved costs for offshore operators by avoiding new surveys where data already exists, increase knowledge of the ocean and reduce the risks associated with its use. At the heart of Marine Knowledge 2020 is the European Marine Observation and Data Network (*EMODnet*), which consists of more than 150 organisations. EMODnet integrates marine data, data products and metadata from different sources, processes these according to international standards and provides access in a uniform way through the central web portal and seven thematic data sub portals. EMODnet provides access to European marine data, metadata, data products and services across seven discipline-based themes: bathymetry, geology, seabed habitats, chemistry, biology, physics and human activities. The *EMODnet Sea Basin Checkpoints* assess the availability, accessibility and adequacy of the current observation monitoring data at the level of the six regional sea-basins, through a series of real-user simulated challenges.

Information systems in support of sectoral EU maritime policy instruments include:

- The Data Collection Framework for the CFP (*DCF*);
- The Infrastructure for Spatial Information in Europe (*INSPIRE Directive*);
- The Maritime Common Information Sharing for the Environment (*CISE*);
- The Water Information System for Europe (WISE) and *WISE-marine* for the MSFD;
- The Biodiversity Information System for Europe (*BISE*);
- The European Climate Adaptation Platform (*CLIMATE-ADAPT*);
- The Marine Environment Monitoring Service (*CMEMS*), marine component of the COPERNICUS initiative (former GMES);
- The *European Atlas of the Seas*, raising the visibility of maritime Europe.

The data policies of the different systems are evolving rapidly under the influence of the ‘Open Access’ Movement. In 2018, the EC launched the Implementation Roadmap for the European Open Science Cloud (*EOSC*, SWD (2018) 83). EOSC aims to enable the open science concept and the digital transformation of science. It is designed to offer EU researchers access to all publically publicly funded research data in Europe, across disciplines and borders to add value in terms of scale, interdisciplinarity and faster innovation.

1.4 Belgium: federal and Flemish legislation and policy instruments for an integrated maritime policy

1.4.1 Marine spatial plan for Belgium

The Belgian marine/maritime policy is largely governed by international treaties and policy instruments, including European and regional partnerships (see 1.1 An integrated global ocean policy and 1.2 Non-UN agreements). In accordance with the international UN Convention on the Law of the Sea (*UNCLOS 1982*), coastal states have sovereignty over the territorial sea and certain sovereign rights in the contiguous zone, the exclusive economic zone (EEZ) and on the continental shelf (see figure 6).

In implementation of the UNCLOS, two important laws were approved in Belgium ([Somers and Maes 2011](#)):

- The law on the Exclusive Economic Zone (EEZ) of Belgium (EEZ law of 22 April 1999) and amending the law of 13 June 1969 on the exploitation of the continental shelf;
- The law for the protection of the marine environment and for the organisation of marine spatial planning in the marine areas under the jurisdiction of Belgium (MMM law of 20 January 1999, amended several times and most recently by the law of 20 July 2012).

In general, the Belgian federal government is responsible for most of the activities that take place on the seaward side of the baseline (= low-water mark), such as environmental policy, shipping and offshore energy. After the various state reforms, the Government of Flanders is responsible for e.g. sea fisheries, shipping assistance, dredging, pilotage, rescue at sea, clearing wrecks and coastal defense works (see [Maes et al. 2013](#) for an overview of the division of competences in marine waters and coastal zone in Belgium). The cooperation agreement of 8 July 2005 between the federal state and the Flemish Region concerning the establishment and the cooperation in a Coast Guard structure ([structuur Kustwacht](#)) established an organised framework for coordination and mutual consultation between different policy areas relating to the sea (law of 4 April 2006, decree of 17 March 2006).

In 2003, a federal minister was appointed with a coordinating function for all federal competences on the Belgian part of the North Sea (BNS). The minister (now secretary of state) of the North Sea also became responsible for marine spatial planning (MSP) ([Pecceu et al. 2016](#)). In Belgium, the law of 20 July 2012 on the organisation of marine spatial planning introduces the concept of MSP in the law of 20 January 1999 for the protection of the marine environment. The focus of the law is on the planning process, stakeholder participation, public consultation and the strategic environmental impact assessment. The law defines MSP as ‘a plan that organises the desired spatial three-dimensional and temporal structure of human activities, based on a long-term vision and on the basis of clear economic, social and ecological objectives’. The law gives MSP a legally binding character and commits to a six-year review. By means of the RD of 13 November 2012, the procedure for the adoption of a MSP, the procedure for introducing an interim amendment and the establishment of a Consultative Commission (composed of all competent federal and Flemish governmental authorities) with advisory authority, was established by the king. The MSP is also adopted by decision of the king, after a deliberation in the Council of Ministers.

Because the BNS is a limited marine area that is fully enclosed by the EEZ of the neighbouring Member States, the efficient and sustainable use of space and the elaboration of a long-term vision for use of sea space is potentially subject to policy choices and the management of the marine areas in the surrounding MS. For that reason, the RD also imposes an obligation to organise cross-border consultations in order to ensure coordination with the neighboring countries.

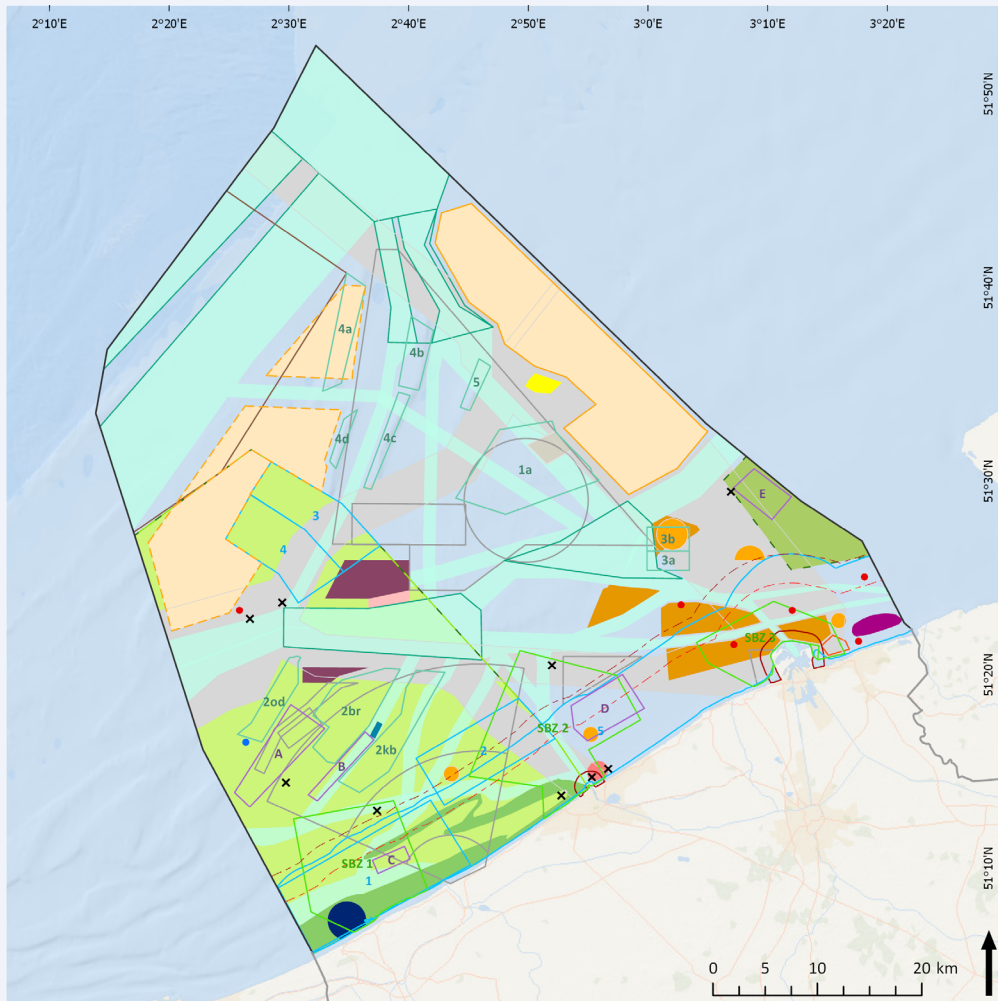
Belgium has had a legally embedded marine spatial plan (MSP) since 2014 (RD of 20 March 2014, see also [Maes and Seys 2014](#), [Van de Velde et al. 2014](#)). In addition to establishing the MSP, the RD includes the following information:

- [Appendix 1](#): Spatial Analysis of the Belgian marine areas;
- [Appendix 2](#): Long-term vision, objectives, indicators and spatial policy choices;
- [Appendix 3](#): Actions to implement the marine spatial plan;
- [Appendix 4](#): Maps.

The current MSP (2014) runs for a period of six years and provides a legal coordinating framework for all activities at sea. In February 2017, the revision process to approve a new MSP by 2020 – which plans the use of space in the BNS until 2026 – was initiated. The draft of the new MSP 2020-2026 (figure 7) was in public consultation from 29 June to 28 September 2018 ([MSP 2020-2026, public consultation 2018](#)). In 2017 a process for the development of the long-term vision for the North Sea until 2050 was also coordinated (theme **Nature and environment**). The long-term vision North Sea 2050, developed by the North Sea Council ([De Backer 2017](#)), is regarded as an integrated vision, while the MSP serves as an instrument to realise this vision. The dynamics of the North Sea Council were continued in the [Think Tank North Sea](#): a neutral and unbound entity in which science, policy, civil society organisations, industry and society at large, address issues related to the North Sea. The think tank starts from science (coordinators are RBINS-OD Nature and VLIZ) and seeks to tie in with the major societal challenges (see [Maes et al. 2013](#) for an overview and trajectory of MSP in Belgium, and the theme chapters of the [Knowledge Guide Coast and Sea 2018](#) ([Devriese et al. 2018](#)) for specific use of space in the MSP, according to user function).

Permits and environmental impact assessments (EIA) ensure a harmonisation of the various user functions in the BNS. The RD of 7 September 2003 and the RD of 9 September 2003 introduced a procedure for obtaining a permit and the obligation to carry out an EIA for activities described under Article 25 of the law of 20 January 1999. To obtain a permit, the applicant must conduct an EIA-report and attach it to the application. This EIA-report estimates the impact of the proposed activity and provides alternatives where necessary. On the basis of the EIA-report and the application, the Operational Directorate Natural Environment (RBINS-OD Nature) prepares an EIA. This EIA is the

INTEGRATED VISION MAP OF THE BNS (2020-2026)



Legend

- | | | |
|---|---|--|
| — Belgian part of the North Sea | ■ Project zone marine innovation location | ■ Zone renewable energy |
| - - - 3 nautical mile line | ■ Zone test island | □ Reservation area port expansion |
| - - - 4.5 nautical mile line | ■ Zone for cables and pipelines | ■ Shipping |
| □ Project zone | ■ RAMSAR | □ Ship routing system |
| □ Zone sea bottom integrity | ■ Natura2000 network | ■ Zone for disposal of dredged material |
| □ Zone for aquaculture | ■ Vlakte van de Raan | ■ Replacement zone dredging dumps |
| □ Zone for aquaculture and passive fishery | □ Special Protection Area | ■ Monitoring area |
| × Recognised shipwrecks, with spatial protective measures | ■ Flemish Banks | □ Exploration zone new sand extraction areas |
| ● Measuring pole | ■ Anchorage | □ Zone for control and exploitation |
| ● Radar tower | ■ Area to be avoided | — Muniton disposal site Paardenmarkt |
| ■ Zone experiments coastal defence | ■ Zone for installation for electricity transport | □ Zone for military activities |
| ■ Calibration area acoustic equipment | | |

These coordinates may still be subject to change with respect to the final version.

Figure 7. Integrated vision map for the BNS (*MSP 2020-2026, public consultation 2018*). The coordinates used for this map may change as the plan is not yet final.

scientific advice on the license application. This advice is then forwarded to the Marine Environment Service of the FPS Health, Food Chain Safety and Environment. This service can attach its advice, after which the file is submitted to the competent minister for a final decision. Commercial fishing, scientific research at sea and shipping are not subject to this licensing and EIA obligation.

1.4.2 Sustainable management of human activities at sea

Belgium has pursued its marine policy since the early 1970s in accordance with the resolutions of the international conventions it has signed and the Ministerial North Sea Conferences (see 1.2 Non-UN agreements). The majority of them remain in force to this day. With the implementation of the MSFD and the definition of the good environmental status (GES), a legally binding foundation was laid for the ecosystem approach, previously introduced by OSPAR. The carrying capacity of the marine ecosystem has since been legally determined on the basis of the GES in the MSFD (see also theme **Nature and environment**).

Human activities at sea must be carried out in accordance with the requirement of protection and conservation of the marine environment and the concept of 'sustainable use of marine goods and services'. The legal transposition of the MSFD into national legislation is a cornerstone for the coordination of MSP within the BNS. In addition to the legal transposition (RD of 23 June 2010), the following steps were taken in the period 2010-2012:

- An initial assessment of the state of the marine environment (2012);
- An analysis of the pressures and influencing factors and of human activities (2012);
- A socio-economic analysis of the users of the BNS and of the costs associated with the degradation of the marine environment (2012);
- A description of the GES and the adoption of environmental targets (2012).

These elements contribute to the formulation of a definition of GES (2012) as a reference against which all marine activities will be appraised as from 2012. Within the framework of the six-year cycle of the MSFD (*Maes et al. 2013*) these analyses were reviewed and the draft reports were submitted for public consultation in June 2018 (*Belgian State 2018* and *Belgian State 2018b*, public consultation). An update of the socio-economic analysis of the use of Belgian marine waters under the MSFD was published in *Volckaert and Rommens (2018)*. The BNS has three bird directive areas and one habitats directive area: human activities that take place within these areas and may have a significant local impact are subject to the so-called 'appropriate assessment'. The environmental effects of the activity are tested against the conservation objectives set for these specific areas (theme **Nature and environment**).

1.4.3 Integrated coastal zone management

Integrated coastal zone management (ICZM) is encouraged in the European Member States mainly by the 'Recommendation on the implementation of Integrated Coastal Zone Management in Europe' (2002/413/EC). This 'ICZM recommendation' provides a common vision and standard for all member states as a policy framework. The recommendation followed a series of European charters and decisions aimed at spatial planning and protection of the coastline, and *Chapter 17* of Agenda 21 (*Maelfait et al. 2013*).

Integrated management leads to a more qualitative and sustainable policy, and according to scientific research it is also cost-saving (*EC 2000*). The first Belgian Recommendation report on *ICZM 2006* contained a number of recommendations for the joint development of sustainable coastal policies. In the Belgian recommendation report *ICZM 2010*, the achievements following these recommendations were further explained for the period 2006-2010. In a retrospective of 20 years of practitioners' experience in regional development in West Flanders (*Mees and Lescrauwaet 2016*) the ICZM instrument and its impact were subjected to a critical review.

Diverse stakeholders have taken initiative on perspectives of coastal development of the coastal zone, as covered in the different thematic texts, for example:

- The *Complex Project Coastal Vision* develops a long-term approach for the protection of Flanders' coast, until 2100 (Government of Flanders, officially launched in December 2017);
- Ecosystem Vision for the Flemish Coast (*Van der Biest et al. 2017a*): an analysis of ecosystem services (based on the CICES v4.3 classification of ecosystem services) in view of the development of a long-term vision 2100 (see theme **Safety against flooding**).

The Belgian coastal waters are part of the International River Basin District of the Scheldt which is managed by the three Belgian regions, the federal government as well as France and the Netherlands (see theme **Scheldt Estuary**). International coordination takes place via the International Scheldt Commission (i.e. Scheldt Treaty), while national

coordination takes place via the Coordination Committee for International Environmental Policy (CCIM) (cooperation agreement of 5 April 1995), piloted by the federal government. For a comprehensive overview of the relevant authorities and regional, tri- and bilateral treaties for the BNS and adjacent estuaries, please refer to **Marine Policy – Policy Instruments and Legislation 2018** ([Verleye et al. 2018](#)).

Legislation reference list

Overview of the relevant legislation at the international, European, federal and Flemish level. For the consolidated European legislation we refer to [Eurlax](#), the national legislation can be consulted in the [Belgisch staatsblad](#) and the [Justel-databanken](#).

International agreements, treaties, conventions, etc.		
Title	Year of conclusion	Year of entry into force
International Convention for the regulation of whaling	1946	
Agreement to combat pollution in the North Sea Area from maritime disasters and chronic pollution from ships and offshore installations (Bonn Agreement)	1969	1983 (EU)
The Convention on Wetlands, called the Ramsar Convention, is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources (Ramsar)	1971	1975
Convention for the protection of the marine environment and the coastal region of the Mediterranean (Barcelona Convention)	1975	1976
United Nations Convention on the law of the sea (UNCLOS)	1982	1994
Convention for the protection of the marine environment of the North-East Atlantic (OSPAR)	1992	1998
Convention on the protection of the Black Sea against pollution (Bukarest Convention)	1992	1994
Rio de Janeiro Convention on biological diversity (CBD)	1992	1993
Convention on the protection of the marine environment of the Baltic Sea (Helsinki Convention)	1992	1998 (EU)

European legislation		
Title	Year	Number
Communication: On an integrated maritime policy for the European Union	2007	575
Commission communication: On offshore wind energy: Action needed to deliver on the Energy Policy Objectives for 2020 and beyond.	2008	768
Commission communication on European Strategy for Marine and Maritime Research	2008	534
Communication and action plan establishing a European maritime transport space without barriers	2009	10
Commission communication: Strategic goals and recommendations for the EU's Maritime Transport policy	2009	8
Commission communication: Towards the integration of maritime surveillance. A common information sharing environment for the EU maritime domain	2009	538
Commission communication on the international dimension of the Integrated Maritime Policy of the European Union	2009	536
Commission communication on marine knowledge 2020 - Marine data and observation for smart and sustainable growth	2010	461
Commission communication on Europe 2020: A strategy for smart, sustainable and inclusive growth	2010	2020
Commission communication on developing a maritime strategy for the Atlantic Ocean Area	2011	782
Commission communication on Blue Growth opportunities for marine and maritime sustainable growth	2012	494
Commission communication on innovation in the Blue Economy. Realising the potential of our seas and oceans for jobs and growth	2014	254
Commission communication on the next steps within the common information sharing environment for the EU maritime domain	2014	451
Directive on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)	1992	43
Directive establishing a framework for Community action in the field of water policy (Water Framework Directive)	2000	60
Directive establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)	2008	56

Directive on the conservation of wild birds (Birds Directive)	2009	147
Directive establishing a framework for maritime spatial planning (MSP Directive)	2014	89

Belgian and Flemish legislation

Abbreviation	Title	File number
RD of 7 September 2003	Koninklijk besluit houdende de procedure tot vergunning en machtiging van bepaalde activiteiten in de zeegebieden onder de rechtsbevoegdheid van België	2003-09-07/32
RD of 9 September 2003	Koninklijk besluit houdende de regels betreffende de milieu-effectenbeoordeling in toepassing van de wet van 20 januari 1999 ter bescherming van het mariene milieu in de zeegebieden onder de rechtsbevoegdheid van België	2003-09-09/30
RD of 23 June 2010	Koninklijk besluit betreffende de vaststelling van een kader voor het bereiken van een goede oppervlaktewatertoestand	2010-06-23/04
RD of 23 June 2010	Koninklijk besluit betreffende de mariene strategie voor de Belgische zeegebieden	2010-06-23/05
RD of 13 November 2012	Koninklijk besluit betreffende de instelling van een raadgevende commissie en de procedure tot aanneming van een marien ruimtelijk plan in de Belgische zeegebieden	2012-11-13/07
RD of 20 March 2014	Koninklijk besluit tot vaststelling van het marien ruimtelijk plan	2014-03-20/03
Law of 11 May 1995	Wet houdende goedkeuring van het Verdrag inzake biologische diversiteit, en Bijlagen I en II, gedaan te Rio de Janeiro op 5 juni 1992.	1995-05-11/61
Law of 20 January 1999	Wet ter bescherming van het mariene milieu en ter organisatie van de mariene ruimtelijke planning in de zeegebieden onder de rechtsbevoegdheid van België	1999-01-20/33
Law of 20 July 2012	Wet tot wijziging van de wet van 20 januari 1999 ter bescherming van het mariene milieu in de zeegebieden onder de rechtsbevoegdheid van België, wat de organisatie van de mariene ruimtelijke planning betreft	2012-07-20/39

