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COVER NOTE

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Delegations will find attached document SWD(2025) 50 final.

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PART 1/2

COMMISSION STAFF WORKING DOCUMENT

EVALUATION

of Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)

{SWD(2025) 51 final}

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GLOSSARY

BD	Birds Directive
BQE	Biological quality elements
BSC	Bucharest Convention on the Protection of the Black Sea Against Pollution (Black Sea Convention)
BWD	Bathing Water Directive
CAP	Common agricultural policy
CBD	Convention on Biological Diversity
CFP	Common fisheries policy
CIS	Common implementation strategy
DG ENV	Directorate-General for the Environment
EAP	Environmental action programme
EBA	Ecosystem-based approach
ECA	European Court of Auditors
EEA	European Environmental Agency
EEZ	Exclusive economic zone
EGD	European Green Deal
EIA	Environmental impact assessment
EIONET	European Environment Information and Observation Network
ELD	Environmental Liability Directive
EMFF	European Maritime and Fisheries Fund
EMFAF	European Maritime, Fisheries and Aquaculture Fund
EMODnet	European Marine Observation and Data Network
EMSA	European Maritime Safety Agency
EQS	Environmental quality standards
ESA	Economic and social assessment
EU	European Union
EU ETS	European Union Emission Trading System
Eurostat	Statistical Office of the European Union
FCS	Favourable conservation status
GES	Good environmental status
GFCM	General Fisheries Commission for the Mediterranean
GHG	Greenhouse gas
HD	Habitats Directive
HELCOM	Convention on the Protection of the Marine Environment of the Baltic Sea
ICES	International Council for the Exploration of the Sea
INSPIRE Directive	Infrastructure for Spatial Information in the European Community Directive (Directive 2007/2/EC)
IAS	Invasive alien species
IMO	International Maritime Organisation
IMP	Integrated maritime policy
JRC	Joint Research Centre
LIFE	EU funding instrument for the environment and climate action
MARPOL	International Convention for the Prevention of Pollution from Ships
MPA	Marine protected area
MRU	Marine Reporting Unit
MSCG	Marine Strategy Coordination Group (part of the CIS)
MSFD	Marine Strategy Framework Directive
MSP	Maritime spatial planning
MSY	Maximum sustainable yield
NEA	North-east Atlantic Ocean

NEAFC	North-East Atlantic Fisheries Commission
NECD	National Emission Ceilings Directive
NGO	Non-governmental organisation
NIS	Non-indigenous species
OSPAR	Convention on the Protection of the Marine Environment of the North-East Atlantic
PoM	Programme of measures
QSR	Quality status report
RBMP	River basin management plan
REACH	Registration, evaluation, authorisation and restriction of chemicals
RFMOs	Regional fisheries management organisations
RSC	Regional sea Convention
SDG	Sustainable development goals
SEA	Strategic environmental assessment
SOER	State of environment report
SPA	Special protection area
STECF	Scientific, Technical and Economic Committee for Fisheries
SWD	Staff working document
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the EU
UN	United Nations
UNEP-MAP	United National Environment Programme – Mediterranean Action Plan (Barcelona Convention)
UNFCCC	United Nations Framework Convention on Climate Change
UNCLOS	United Nations Convention of the Laws of the Sea
WFD	Water Framework Directive
WG	Working group (within the CIS)
WG DIKE	Working Group – Data, Information, and Knowledge Exchange (CIS Working Group)
WG POMESA	Working Group – Programme of Measures, Economic and Social Analysis (CIS Working Group)
WG GES	Working Group – Good Environmental Status (CIS Working Group)
WISE	Water Information System for Europe (EEA database)
WTP	Willingness to pay

1. INTRODUCTION

1.1 General context of the evaluation

Europe's seas and ocean are home to an abundant and diverse array of species and ecosystems, providing habitats for rich and often still unknown marine biodiversity. They also support essential services for people in the EU, such as food provision and the regulation of cycles of heat, water and elements, including carbon.

More than half of the oxygen on the planet comes from marine organisms, one quarter of annual human-induced CO_2 emissions into the atmosphere is absorbed by marine waters, and the greatest reservoir of actively cycled carbon on earth is the ocean (50 times larger than the atmosphere)[1].

The ocean and the seas are also an integral part of the global water cycle.

The EU is a continent with a strong dependency on the sea.

- Seas have provided Europeans with food, livelihood, recreation, freight and passenger transport services, cultural inspiration and well-being for millennia.
- European seas cover over 11 million km^2 – an area larger than Europe's land territory.
- 22 out of 27 EU Member States have a coastline connecting Europeans to the sea.
- In 2011, 41% of Europe's population – 206 million people – lived in the 378 EU coastal regions[2]

Therefore, protecting the marine environment is not only crucial for the conservation of biodiversity but also for our resilience against climate change and for the well-being of humans and the EU economy. The EU's blue economy – based on sectors that directly or indirectly depend on the health and productivity of our seas, ocean and coasts – generated a turnover of EUR 624 billion in 2021[3].

Although vital for Europe's economic and social well-being**,** the marine environment and its ecosystems are subject to multiple pressures and impacts from human activities, such as fishing, seabed disturbance, pollution and climate change, and are already, generally, in poor condition[4], risking irreversible damage.

As a response, the EU put forward the Marine Strategy Framework Directive (Directive 2008/56/EC, or MSFD) as a comprehensive framework to protect the marine environment around Europe while enabling the sustainable use of marine goods and services.

This evaluation is undertaken in the wider policy context of the European Green Deal[5], with a special focus on the Zero Pollution Action Plan[6] and the EU Biodiversity Strategy[7]. Indeed, the evaluation of the MSFD was specifically announced in the Zero Pollution

[1] European Environment Agency, Marine Messages, Our seas, our future — moving towards a new understanding, 2014. Available at: https://www.eea.europa.eu/publications/marine-messages
[2] Ibid.
[3] Eurostat (SBS), DCF and Commission, EU Blue Economy established sectors - main indicators, 2021, cited in the EU Blue Economy Report 2024 (European Commission, DG MARE).
[4] EEA, *Marine messages II – Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem- based approach*, EEA Report, No17/2019
[5] The European Green Deal. COM/2019/640 final.
[6] Pathway to a Healthy Planet for All EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil'. COM/2021/400 final.
[7] EU Biodiversity Strategy for 2030. Bringing nature back into our lives. COM/2020/380 final.

Action Plan, to assess how far the implementation of the Directive contributes to the EU's zero pollution and broader Green Deal goals.

This evaluation is also expected to contribute to the preparation of the European Ocean Pact, the aim of which is to ensure the good governance and sustainability of the ocean in all of their dimensions and of the Water Resilience Strategy, which will address water efficiency, scarcity, pollution and water-related risks in Europe, as announced by President von der Leyen in her Political guidelines for the 2024-2029 Commission mandate[8].

Article 23 of the Directive calls for the Directive to be reviewed by 15 July 2023. Fifteen years after its adoption, the evaluation aims to assess how successful the Directive has so far been in addressing the above-mentioned challenges and what other achievements have been made.

In line with the Better Regulation guidelines and toolbox[9], the evaluation considers how the Directive has performed in terms of: (1) **effectiveness**, (2) **efficiency** and (3) **coherence** with other policy goals.

It also assesses the continued need for intervention and the (4) **relevance** of the Directive in the context of emerging needs and specific policy issues, as well as its (5) **EU added value** (value that is additional to what would otherwise have been created by EU countries acting alone).

The evaluation was conducted as a **REFIT exercise**, i.e. in accordance with the Commission's Regulatory Fitness and Performance Programme, which focuses on ensuring that:

1. EU legislation is fit for purpose;
2. the regulatory burden is minimised;
3. simplification options are identified (overly burdensome and complex aspects of EU legislation are flagged).

These questions were also developed into an 'evaluation matrix' (see Annex III), including sub-questions, indicators and data/information sources.

1.2 Methodology applied

The evaluation builds on the 2020 implementation report[10] ('Article 20 report'), completed with the results from the Directive's second implementation cycle (2018-2024). It covers the period from 2008 until the end of 2023.

The Commission was supported by an external contractor, who undertook an evaluation support study (see Annex II). Relevant data was collected for this study, mainly through desk research and a wide range of stakeholder consultations that were held between April 2021 and January 2022 (see synopsis report in Annex V).

[8] https://commission.europa.eu/document/download/e6cd4328-673c-4e7a-8683-f63ffb2cf648_en?filename=Political%20Guidelines%202024-2029_EN.pdf

[9] https://commission.europa.eu/law/law-making-process/planning-and-proposing-law/better-regulation/better-regulation-guidelines-and-toolbox_en

[10] Report from the Commission on the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC), COM/2020/259final, and its annexes SWD(2020)60, SWD(2020)61 and SWD(2020)62.

This included consultation on the evaluation roadmap[11], which was published in April 2021, an open public consultation (from July until October 2021), followed by a stakeholder conference (December 2021)[12] and targeted focus groups. Finally, a general stakeholder workshop was organised (November 2022).

These stakeholder consultations were organised for the entire MSFD review process, as the evaluation was initially part of a back-to-back exercise, covering both the Directive's evaluation and the impact assessment for a possible revision of the Directive.

However, towards the end of 2022 it was decided to decouple the evaluation from the impact assessment process, to factor in important policy developments that are highly relevant for the MSFD, notably in the area of nature conservation and restoration[13] and renewable energy[14], and to take stock of the full second implementation cycle and all assessments made by the Commission.

This should result in a solid evaluation that can provide the basis for any future impact assessment needed. The Commission also undertook a 'territorial impact assessment' between March and June 2022, which focused on the regional impacts from implementing the Directive, and provided useful insights.

The Commission's Joint Research Centre issued recommendations for the MSFD review[15], based on its earlier assessments of Member States' reports on the different aspects of the marine strategies (i.e. assessments of marine waters, targets, 'good environmental status' (GES) and monitoring).

2. WHAT WAS THE EXPECTED OUTCOME OF THE EU ACTION?

2.1 Description of the EU action and its objectives

In 2002, the 6th Environmental Action Programme[16] (EAP) brought EU-level policy attention to the marine environment, calling for a thematic strategy to set a framework for action at EU level. The aim was 'to promote the sustainable use of the seas and conserve marine ecosystems'.

This strategy was outlined in a Commission Communication[17] requesting an 'ambitious'

[11] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12898-Protecting-the-marine-environment-review-of-EU-rules_en

[12] Stakeholder conference 'the future of our seas', 17 December 2021, https://environment.ec.europa.eu/events/future-our-seas-2021-12-17_en

[13] Communication from the Commission, EU Action Plan: Protecting and restoring marine ecosystems for sustainable and resilient fisheries, Brussels, 21.2.2023 COM(2023) 102 final; Proposal for a Regulation of the European Parliament and of the Council on nature restoration, COM/2022/304 final.

[14] Communication from the Commission, REPowerEU Plan, COM/2022/230 final; Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652.

[15] Joint Research Centre, 2021 Marine Strategy Framework Directive - Review and analysis of EU Member States' 2018 reports (https://mcc.jrc.ec.europa.eu/main/dev.py?N=18&O=460), and 2023 Marine Strategy Framework Directive – Review and analysis of EU Member States' 2020 reports on Monitoring Programmes (https://publications.jrc.ec.europa.eu/repository/handle/JRC129363)

[16] Decision 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the 6th Community Environment Action Programme.

[17] European Commission, COM(2002)539 final, Towards a Strategy to Protect and Conserve the Marine Environment.

marine strategy by 2005[18]. Following 3 years of stakeholder consultations and assessment, the 'Thematic Strategy on the Protection and Conservation of the Marine Environment'[19] was published on 24 October 2005, accompanied by a legislative proposal for a Directive[20] and an impact assessment [21].

The strategy and impact assessment highlighted the many threats to the marine environment and the ensuing risk to the long-term productivity of the ocean and seas. Threats stemmed from increased pressures, including commercial fishing, climate change, eutrophication, oil pollution, the introduction of non-indigenous species from shipping, human activities on the coasts, contamination from hazardous substances, physical disturbances to the seabed, litter and microbiological pollution, discharges of radionuclides and noise pollution. The documents emphasised the need for an adequate institutional framework for managing the seas.

In response to the problems and policy context, the MSFD was adopted on 17 June 2008. The overall aim of the 6th EAP was reflected in the Directive's objective to 'achieve or maintain the good environmental status (GES) of the EU marine environment by 2020', by developing an integrated EU framework for the protection, conservation and sustainable use of the sea.

As such, the Directive echoes the Water Framework Directive (WFD)[22] adopted 8 years before, which takes a similar approach towards achieving 'good status' of the EU's fresh and coastal water bodies through integrated water management.

Several complementary, more 'process-based' objectives in the Directive define the approach for achieving the envisaged EU integrated framework. These include:

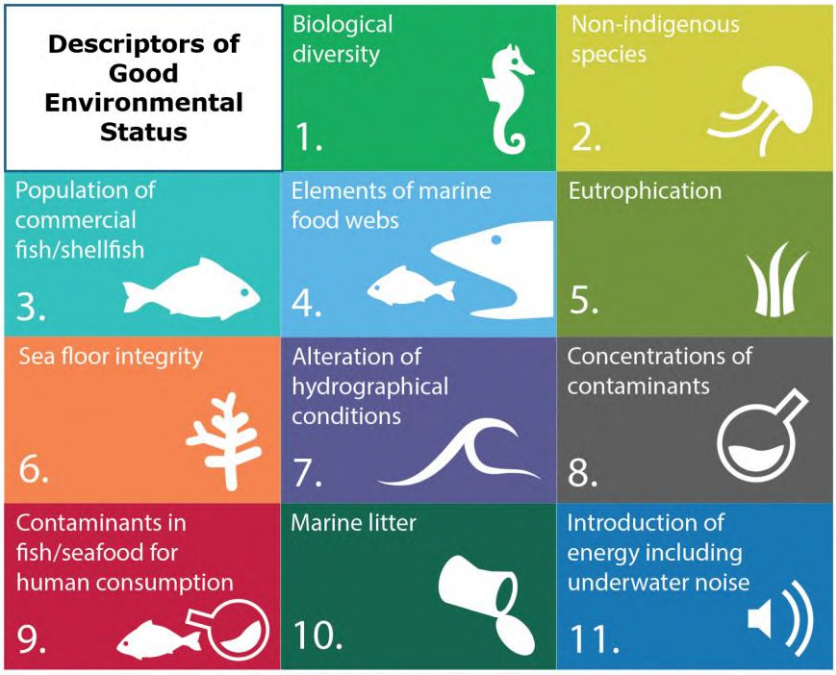
1. the development of **marine strategies**;
2. strengthened **regional cooperation;**
3. improved **marine data and knowledge**;
4. integration of the **ecosystem-based approach**;
5. increased **coherence** with other legislation.

These process-based objectives reflect the main problems recognised in the strategy and in the Commission's impact assessment for the proposed framework.

The MSFD requires a holistic approach to achieving good environmental status for all EU marine waters by 2020, with regard to a wide range of species and habitats and considering all pressures that can possibly impact them. These are reflected in the 11 descriptors for determining good environmental status (included in Annex 1 of the Directive) (Figure 1).

[18] Environment Council Conclusions of 4 March 2003 as quoted in European Commission, SEC(2005) 1290, Impact Assessment.
[19] European Commission, COM(2005)504 final, Thematic Strategy on the Protection and Conservation of the Marine Environment.
[20] European Commission, COM(2005) 505 final, Proposal for a Directive of the European Parliament and of the Council establishing a Framework for Community Action in the field of Marine Environmental Policy (Marine Strategy Directive).
[21] European Commission, SEC(2005) 1290, Commission staff working document - Annex to the Communication from the Commission to the Council and the European Parliament - Thematic Strategy on the Protection and Conservation of the Marine Environment and Proposal for a Directive of the European Parliament and of the Council establishing a Framework for Community Action in the field of Marine Environmental Policy (Marine Strategy Directive) - Impact Assessment
[22] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy

Figure 1. 11 qualitative descriptors for determining GES, as presented in the MSFD



Source: EEA WISE Marine website[23]

Figure 2. Overview of the steps to create marine strategies

Source: European Commission, Our Oceans, Seas and Coasts

The MSFD creates a series of steps to be carried out by Member States to develop marine strategies (see Figure 2). For the purposes of coordination and assessment at EU level, the steps are divided into three stages:

1. **Initial assessment, determination of GES and establishment of environmental targets**, as provided for in Articles 8(1), 9(1) and 10(1) MSFD;
2. Set-up and implementation of **monitoring programmes** for the ongoing assessment of the environmental status of their marine waters, in accordance with Article 11(1) MSFD;

[23] WISE-Marine: https://water.europa.eu/marine

3. **Programmes of measures** (PoMs) in accordance with Article 13(2) MSFD[24].

The Directive covers the marine waters of EU Member States from the coastline to the outmost reach of their Exclusive Economic Zone (EEZ) (and in some cases also their extended continental shelf) in the following marine regions and subregions (Article 4):

(a) the Baltic Sea;

(b) the North-east Atlantic Ocean; and within that the following subregions:

- the Greater North Sea, including the Kattegat, and the English Channel;
- the Celtic Seas;
- the Bay of Biscay and the Iberian Coast;
- in the Atlantic Ocean, the Macaronesian biogeographic region, being the waters surrounding the Azores, Madeira and the Canary Islands;

(c) the Mediterranean Sea; and within that, the following subregions:

- the Western Mediterranean Sea;
- the Adriatic Sea;
- the Ionian Sea and the Central Mediterranean Sea;
- the Aegean-Levantine Sea.

(d) the Black Sea.

The Directive excludes from its scope '*waters adjacent to the countries and territories mentioned in Annex II to the Treaty and the French Overseas Departments and Collectivities'* (Article 3(1)(a)).

Reporting and review mechanism

A critical element of the MSFD is its **reporting and review mechanism**, requiring Member States to notify the Commission of the outcomes of the steps in the development of the marine strategies. The different reporting obligations and the review by the Commission are explained in more detail in Annex VI (MSFD implementation process and governance).

Firstly, in the reporting cycle, Member States report their (renewed) assessments of the state of their marine waters, GES determinations and environmental targets to the Commission (referred to as the "Article 8, 9 and 10 reports").

Subsequently, Member States are required to report their (renewed) monitoring programmes for further assessment by the Commission (referred to as the "Article 11 reports"). In a third step, Member States are also required to submit their (renewed) Programmes of Measures (PoMs) to the Commission (referred to as the "Article 13 and 14 reports").

The Commission assesses whether the notified information constitutes an appropriate framework to meet the requirements of the Directive (including the consistency of marine strategies within marine regions). These reports, which are prepared after each step of the

[24] As part of their programmes of measures, Member States may identify the need to apply exceptions under Article 14 of the Directive, i.e. instances where, for the reasons specified in that Article, the environmental targets or good environmental status cannot be achieved through measures taken by that Member State. These instances include: (a) action/inaction for which the Member State is not responsible; (b) natural causes; (c) force majeure; (d) modifications/alterations to the marine environment characteristics due to action taken for reasons of overriding public interest which outweigh the negative impact on the marine environment, and natural conditions which do not allow for timely improvement in the status of marine waters.

6-year cycle, have taken the form of Commission Communications, accompanied by staff working documents (SWDs) containing more detailed assessment and/or guidance[25].

To facilitate the systematic and comparable analysis of Member States' reports, the Commission developed and informally agreed a 'reporting package' with Member States[26].

Reporting guidance documents and reporting sheets were developed for all subsequent reporting exercises[27]. For the first step in the implementation cycle, Member States were asked to submit their reporting sheets, together with their national reports and any other supporting documentation, to the EEA **ReportNet** system[28] by 15 October 2012.

All information reported by Member States is publicly available through the Water Information System for Europe (WISE Marine)[29], a website managed by the European Environment Agency and the European Commission and providing information and data on the state of Europe's seas, and action to protect and improve it. In addition, Member States have the obligation to consult all interested parties and the public on the different elements (and updates) of their marine strategies as laid out in Figure 2.

Good environmental status and the 2010 Commission Decision

The MSFD (Article 9(3)) gives the Commission delegated powers to lay down criteria and methodological standards to ensure consistency in Member States' determinations of GES.

In 2010, the Commission adopted **Decision 2010/477/EU** as the key reference framework for (i) Member States' initial determination and reporting of GES in 2012 and (ii) the 2014 monitoring programmes. It established criteria to be used by Member States to determine the GES of their marine waters and to guide their status assessments.

The Decision was **amended in 2017,** to provide a clearer, simpler, more concise, more coherent and comparable set of (i) criteria for measuring good environmental status and (ii) methodological standards[30] (called 2017 GES Decision in this report).

Translating GES into measurable items, identifying parameters and setting objective values is essential, not only for measuring progress but also to improve the coordination of marine strategies within a region.

More information on the structure and implementation of the 2017 GES Decision can be found in Annex VI.

Regional cooperation and coordination

Article 4 of the MSFD ensures that Member States 'take due account' of the fact that their marine waters make up an integral part of the four marine regions in Europe (the Baltic Sea, the north-east Atlantic Ocean, the Mediterranean and the Black Sea), and specifies

[25] For the overall approach and purpose of Member State reporting under the MSFD, see European Commission, *Approach to reporting for the Marine Strategy Framework Directive*, https://circabc.europa.eu/rest/download/d13fa277-5147-4c02-aea0-3be8f9344807

[26] Marine Directors, 2012, Informal meeting of Water and Marine Directors of the European Union, Candidate and EFTA Countries, Warsaw, 8-9 December 2011, Final Synthesis: https://circabc.europa.eu/ui/group/326ae5ac-0419-4167-83ca-e3c210534a69/library/4f87f0d0-0033-40e8-8513-d6e5fa9213b3/details

[27] MSFD reporting processes to date are available here: https://cdr.eionet.europa.eu/help/msfd

[28] https://cdr.eionet.europa.eu/help/msfd

[29] Wise Marine, homepage: https://water.europa.eu/marine

[30] Commission Decision (EU) 2017/848 of 17 May 2017 laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU.

their various subregions.

As stated in Article 3(5) of the MSFD, GES is to be determined for each marine region or subregion, which stresses the importance of regional cooperation when implementing the MSFD. Article 3(9) specifies that this regional cooperation is needed to coordinate activities when developing and implementing marine strategies.

Article 5(2) of the MSFD requires Member States to cooperate to ensure that the measures in place to achieve the objectives of the MSFD are consistent and coordinated across the marine region or subregion. Article 6(1) of the MSFD specifies that this coordination must, where practical and appropriate, use **existing regional institutional cooperation structures**, including the **regional sea conventions** (RSCs).

In developing their marine strategies, Member States must take into account the status assessments carried out within the RSCs, as well as the assessment methodologies used (Articles 8(2) and 8(3)). Member States must also consider monitoring programmes within the RSCs, to avoid duplication of effort (Annex V, point 10).

A competent authority (or authorities) must be designated specifically for cooperation and coordination (Article 7(1), MSFD Annex II).

In addition, the Directive requires the Commission to consult the RSCs when developing the criteria and methodological standards used to determine GES (Article 9(3)).

The MSFD also requires RSCs to be regularly updated and consulted during the implementation of the Directive. Any updates to the marine strategies in accordance with Article 17 must be sent to the RSCs as well as the Commission (Article 17(3)).

Intervention logic

Figure 3 provides a schematic overview of the structure of the Directive and how the different items link to each other (see also figure in Annex VI).

Figure 4 summarises how the MSFD functions, including its objectives, outcomes and impacts (intervention logic)

Figure 3. Structure of the MSFD

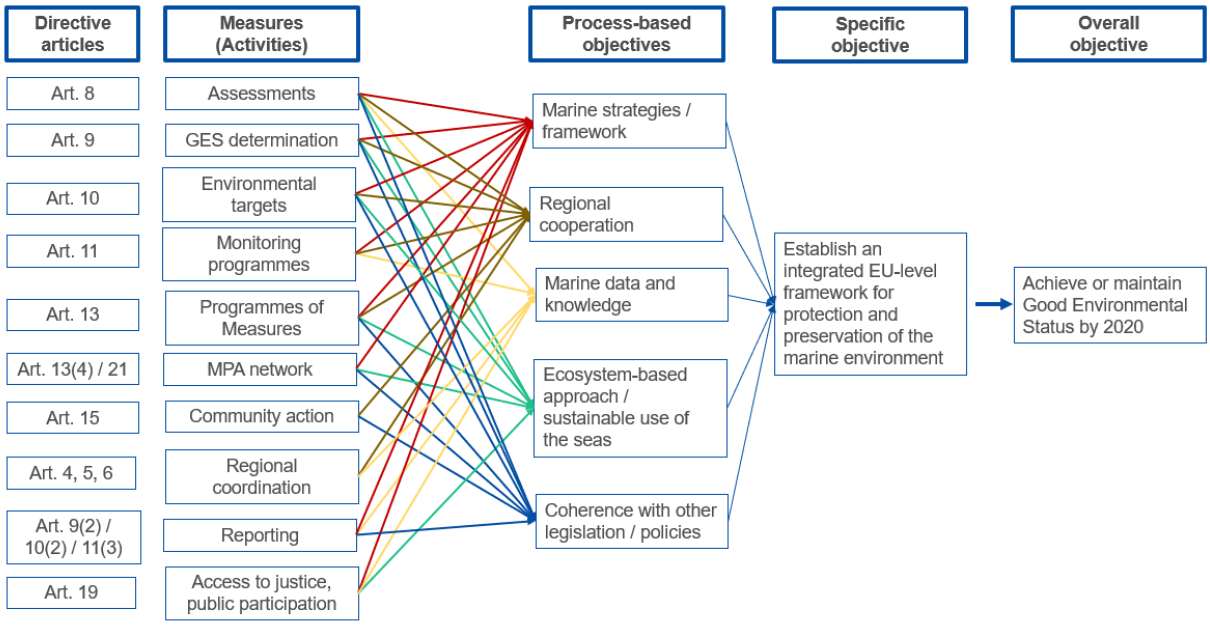
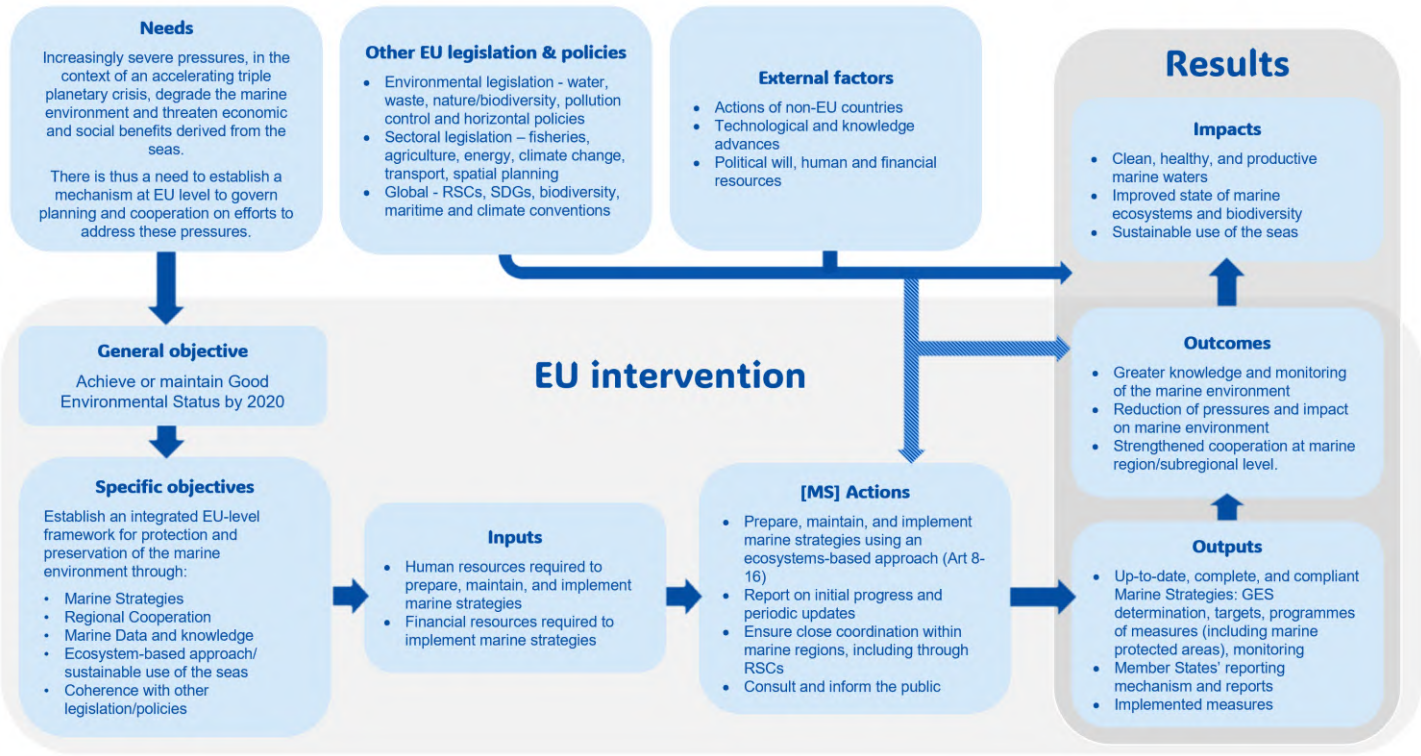


Figure 4. Intervention logic for the MSFD



2.2 Point(s) of comparison

This section describes the situation at the time the MSFD was adopted and the expected outcomes. The Directive is assessed against:

1. expected outcomes;
2. expected costs and benefits;
3. the wider policy context at the time of adoption.

2.2.1 Expected outcomes

The MSFD was adopted to close a policy gap by addressing the protection of the marine environment in a comprehensive way.

The objective of marine protection was already covered to some extent by a range of other initiatives, such as the Community Environment Action Programmes, the Birds and Habitats Directives, the common fisheries policy (CFP) and the Water Framework Directive (WFD), but these either did not impose direct legal requirements, or were limited in terms of their geographic and substantive scope.

The MSFD also sought to achieve what Member States could not achieve through national measures and/or relevant international agreements, i.e. set up an EU-wide framework through which Europe's marine environment would be more effectively protected, in an integrated manner.

In line with the principles of subsidiarity and proportionality, detailed objectives and management measures would have to be defined at national level[31].

In terms of concrete improvements to the marine environment, the only firm target was that Member States should 'take the necessary measures to achieve or maintain good

[31] European Commission, COM(2005) 505 final, as above, pp. 5-7.

environmental status in the marine environment by the year 2020 at the latest' (Article (1)).

Expected outcomes mentioned in the impact assessment related to the **development of the marine strategies** rather than to concrete improvements to the state of the marine environment[32].

The impact assessment report described a range of different expected outcomes, creating a picture of what success would look like. In the short term, the main expected direct outputs/outcomes were[33]:

- more coordinated and effective management of Europe's marine environment;
- better knowledge, by establishing an integrated monitoring and assessment framework;
- further awareness-raising through better knowledge about the state of the marine environment, better public information and increased engagement;
- increased political attention to the health of marine ecosystems;
- more joined-up policymaking in the EU on the marine environment, which would in turn contribute to more targeted measures and more integrated strategies and laws (such as the common fisheries policy (CFP) and common agricultural policy (CAP));
- better cooperation between the EU, Member States and regional sea conventions, based on both expertise and the binding nature of marine strategies.

In the longer term, the impact assessment expected that the MSFD would 'set out the framework through which the good ecosystem status of Europe's marine environment could be achieved'.

It noted that the effects would require some time to become apparent, mainly due to the time requirement for marine ecosystems to react to reduced pressures[34]. It was also acknowledged that the measures to be taken in each Member State and sea region could not be defined in advance, as much would depend on the outcome of assessments and the exact nature of the PoMs.

2.2.2 Expected costs and benefits

Costs and benefits were broadly assessed for the economic sectors that have the largest impact on the marine environment and as such expected to be most impacted by the MSFD. Trade-offs were expected, especially for sea-based sectors, such as fisheries, aquaculture and tourism. These sectors would bear the brunt of the short-term costs, through restrictions on activity such as capacity limits and restricted licensing.

On the other hand, these sectors would ultimately benefit from improvements to the health of marine ecosystems, including the management of other human pressures within the carrying capacity of oceans and seas.

Sectors carrying out activities that negatively impact the marine environment, such as shipping, would not benefit as much in the long term.

[32] This is also explained by the fact that the original Commission proposal did not set a target date for achieving GES. The 2020 deadline was included during negotiations with the European Parliament and Council.

[33] European Commission, SEC(2005) 1290, Impact Assessment, pp. 35-38.

[34] The figure in Annex VII shows how the state of the marine environment has developed over the last 10 years (2014-2024).

Likewise, some negative social impact (primarily job losses) was expected in certain sectors, such as fisheries and tourism, especially where unsustainable practices prevailed, along with shifts to new activities likely to benefit from the increased quality of the marine environment (especially in more isolated areas) – albeit in the longer term.

Other major expected positive social impacts were a reduced incidence of ill-health and increased quality of life.

Some **cost efficiencies** were also expected, namely:

- eliminating or reducing the duplication of efforts in assessment and monitoring among the EU institutions, Member States, RSCs, and possibly between different sectors, thanks to joint systems for monitoring and data-sharing;
- increased certainty for marine-related industries in terms of permitted activities;
- more informed policymaking, resulting in better targeted and less costly measures;
- benefits for scientific research.

At the impact assessment stage, it was expected that the implementation of the MSFD would entail some **administrative costs**, mainly for public authorities. The administrative burden was estimated to be approximately EUR 90 million for the initial phase (2-year period) and slightly above EUR 70 million a year thereafter.

Ultimately it was acknowledged that impacts, costs, benefits and the cumulative effects of the potential measures would vary by region and that detailed assessment would have to be done at regional level, building on the assessment carried out as part of the marine strategies. It was envisaged that each marine strategy would be underpinned by a detailed cost-benefit assessment.

2.2.3 Wider policy context (*at the time of adoption of the MSFD*)

Considerable effort was made when preparing the MSFD to ensure it would fit into the wider policy framework. The European Parliament's 2006 report on the legislative proposal noted that the proposed 'Marine Strategy Directive' should 'form the environmental pillar of the new European maritime policy' and 'fill a gap in European environmental policy, which is focused on spatial management'[35].

This would support the EU's aim to become 'the world's most competitive and dynamic knowledge-based economy, capable of sustainable economic growth with more and better jobs and greater social cohesion' by 2010 (as stated in the Lisbon agenda).

The impact assessment emphasised that the MSFD was specifically designed to capture contributions to and impacts on the marine environment from all relevant EU policies, including fisheries, transport, energy, research, agriculture and others.

These policies were intended to become more mutually supportive and effective in protecting the marine environment, particularly in relation to human activities in these sectors.

More specifically, the implementation of the MSFD was broadly designed to work in concert with that of the WFD, which requires achievement of good ecological and chemical

[35] European Parliament, 2006, Draft Report on the proposal for a directive of the European Parliament and of the Council establishing a Framework for Community Action in the field of Marine Environmental Policy (Marine Strategy Directive) of 4 July 2006.

status for fresh and coastal water bodies by 2027, at the latest.

The MSFD also sought to accommodate relevant global commitments at the time, notably the Johannesburg Plan of Implementation adopted at the 2002 World Summit on Sustainable Development, which encouraged the application of the ecosystem-based approach to managing the marine environment, and the Convention on Biological Diversity (CBD)[36], with its emphasis on creating a global network of MPAs.

The impact assessment acknowledged that the MSFD would not regulate all uses and users of the ocean and seas, but would focus on environmental issues, leaving scope for the development of a more comprehensive maritime policy.

3. HOW HAS THE SITUATION EVOLVED OVER THE EVALUATION PERIOD?

3.1. Current state of play in achieving good environmental status for EU marine waters

Scientific assessments[37] of the state of EU marine waters and marine ecosystems indicate that EU seas to date do not, generally, have 'good environmental status'.

There has been progress in some areas, e.g. certain populations of mammals and seabirds have increased. Also there have been signs of recovery in the reproductive capacity of several commercial fish and shellfish stocks in the north-east Atlantic[38].

Biodiversity loss, however, was not halted in Europe's seas during the first MSFD cycle and marine biodiversity remains under threat[39]. Most pressures regulated by the MSFD are still present and, in some cases, increasing.

An analysis and overview of the state of the marine environment according to the 11 qualitative descriptors of good environmental status in the MSFD is provided in Annex VII to this report.

This picture, as far as the pollution-related descriptors are concerned, is also confirmed by monitoring under the EU Zero Pollution action plan, which provides for pollution reduction targets (for 2030)[40].

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[36] United Nations Environment Programme (1992). Convention on biological diversity, June 1992. https://wedocs.unep.org/20.500.11822/8340.

[37] The decline in marine biodiversity across Europe's seas is evidenced in 'The European environment - state and outlook 2020' (https://www.eea.europa.eu/soer-2020/intro), 'The IPBES regional assessment report on biodiversity and ecosystem services for Europe and Central Asia' (https://ipbes.net/assessment-reports/eca), and further references and details are provided in SWD(2020) 61. More recently, the 2023 Quality Status Reports for OSPAR, HELCOM and UNEP/MAP (Barcelona Convention) provide detailed assessments at regional level, all indicating that good environmental status has not been achieved.

[38] Commission Staff Working Document, Review of the status of the marine environment in the European Union Towards clean, healthy and productive oceans and seas – Accompanying the Report from the Commission to the European Parliament and the Council on the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC), SWD (2020)61 final

[39] EEA, Marine messages II, Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem- based approach, EEA report, No 17/2019.

[40] Targets relevant to marine pollution: by 2030, 50% reduction in plastic litter at sea and 30% reduction in microplastics released in the environment; 50% reduction of nutrient losses, use and risk of chemical pesticides, use of the more hazardous pesticides, sale of antimicrobials for farmed animals and aquaculture; Pathway to a Healthy Planet for All - *EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil'* COM(2021) 400 final.

Every 2 years, in its 'Zero Pollution Monitoring and Outlook', the Commission, together with the EEA, monitors progress towards the targets. The second edition of this integrated product[41] shows progress in reducing marine litter but a need for enhanced regulations to tackle the issue of microplastics. It also shows that the reduction of nutrient losses by 50% by 2030 is unlikely to succeed due to the persistent challenges of agricultural runoff and fertilizer use.

3.2. Implementation

During the MSFD's 6-year implementation cycles, Member States report on the different parts of their marine strategies according to specific timelines, and the Commission assesses and issues reports and recommendations accordingly.

This section will provide an overview of the state of reporting (reflecting the different parts of the marine strategy), the implementation support mechanisms in place and cooperation/coordination at regional level.

3.2.1. Six-year review cycles

Implementation began in earnest with the development of marine strategies, starting with initial assessments, GES determination and environmental target setting. Member States were required to notify the Commission of the completion of these three items by October 2012, kicking off the first 6-year implementation cycle.

This was followed by the submission of Member State monitoring programmes in 2014 and programmes of measures ('PoMs') in 2016. Implementation of the PoMs started in 2016.

In accordance with Article 17 of the Directive, Member States have recently concluded the **second cycle of implementation.** By October 2018, the updates on the assessments of marine waters, GES determinations and environmental targets had to be notified to the Commission, followed by the updated monitoring programmes 2 years later (October 2020).

The cycle was concluded with the reporting of the updated PoMs (due by March 2022).

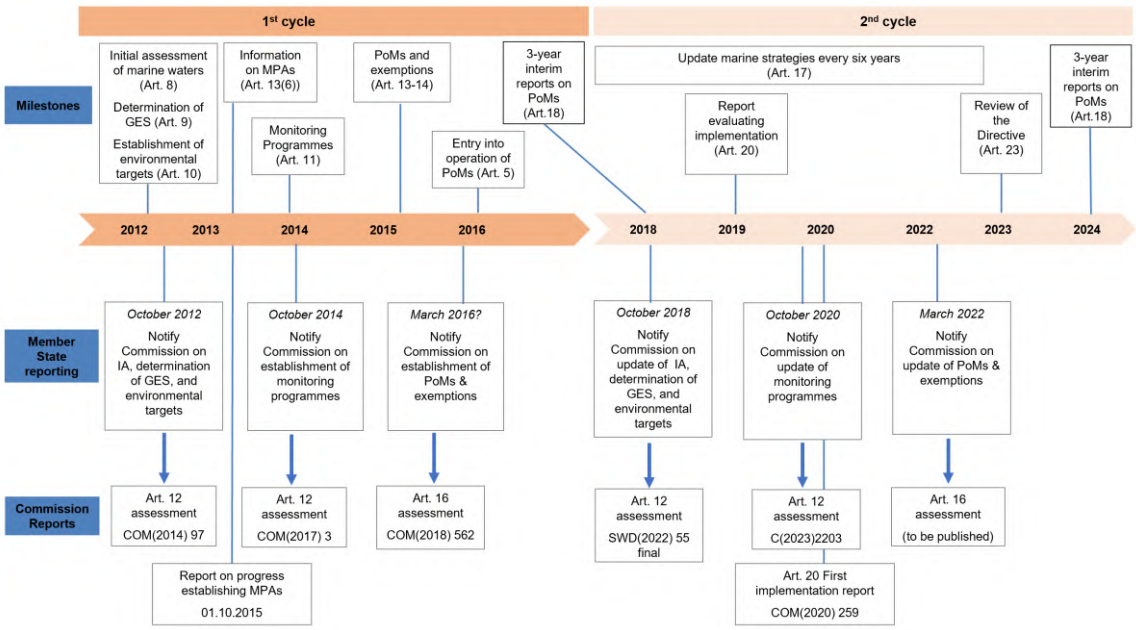
The Commission finalised and published its Article 12 assessment report (on the Article 9, 10 and 11 updates) in March 2022[42], while the Article 16 report on the updated PoMs has only been recently finalised[43].

[41] Zero Pollution Monitoring and Outlook 2024, Synthesis Report (to be published in the first semester of 2025).

[42] Commission Notice on recommendations per Member State and region on the 2018 updated reports for Articles 8, 9 and 10 of the Marine Strategy Framework Directive (2008/56/EC), 2022/C 118/01, 14.3.2022, accompanied by a Commission Staff Working Document (2022) 55 final, 11.3.2022.

[43] Report from the Commission to the Council and the European Parliament on the *Commission's assessment of the Member States' programmes of measures as updated under Article 17 of the Marine Strategy Framework Directive (2008/56/EC)*, COM(2025) 3

Figure 5. First and second implementation cycles of the MSFD



3.2.2. Member States reporting in the first and second implementation cycles

The section below explains the situation in reporting in the respective cycle. Section 4.1.1 on effectiveness shows how the situation has evolved between the two cycles.

(1) Member States' reporting in the first implementation cycle (2012-2018):

The first implementation cycle of the MSFD kicked-off in 2012, with Member States expected to submit their updated reports for Article 8 (assessment of the status of their marine waters), Article 9 (determination of GES) and Article 10 (environmental targets) by October of that year, followed by the monitoring reports in October 2014 and the PoMs in March 2016.

Detailed figures on the reporting rate during the first cycle are included in Annex VII.

- **Article 8, 9 and 10 reports (assessment state of marine waters, GES determination and targets)**

Considerable delays were incurred in reporting by Member States, with the majority missing the deadline of October 2012[44], which in turn hampered the Commission's assessment of these reports. However, it is worth noting that most of them eventually used e-reporting in addition to text-based reports. The reporting delays prompted the Commission to start infringement procedures[45].

Only 8% of the initial **definitions of good environmental status** reported by the Member States were evaluated as 'adequate'. The definitions tend to be qualitative, failing to set clear goals. As most definitions lacked quantitative detail, it was difficult to measure

[44] Eight Member States submitted text reports under Articles 8, 9 and 10 on time, with the remaining reports submitted by November 2015. The last electronic report was submitted in February 2016. See figures in Annex VII, and SWD(2020) 60, pg.20.

[45] European Commission, Commission Staff Working Document, accompanying the Commission Report to the Council and the European Parliament, The first phase of implementation of the Marine Strategy Framework Directive, European Commission's assessment and guidance, SWD(2014) 49 final.

progress. Overall, there was also not enough consistency within the same region or subregion[46]

- **Article 11 reports (monitoring programmes)**

In 2014, most Member States reported their electronic and text-based reports fairly close to the deadline of October 2014, but some did so significantly later[47].

The reported monitoring programmes were primarily designed to assess the environmental status of marine waters (biodiversity descriptors and GES definitions, 71%), followed by monitoring of pressures (41%) and human activities at sea (18%).

Only 12% of the programmes focused on the effectiveness of measures to mitigate pressures and their impacts, which may be explained partly by the fact that the Member States did not have operational MSFD measures before 2016[48].

- **Article 13 and 14 reports (programmes of measures and exceptions)**

The PoMs were due for submission by the end of March 2016 and had to be operational by the end of 2016. Only a handful of Member States reported on time[49]. Though in general the Member States made significant efforts to develop their first MSFD PoMs by integrating different national, EU and international policies and covering the existing gaps with new cost-effective measures.

They reported a total of 4 653 measures. Overall, 79% of the reported measures were direct technical or regulatory measures, while the rest were more indirect support measures.

Nevertheless, not all pressures on the marine environment were covered adequately, as just 53% of the assessed PoMs were considered appropriate to tackle the existing pressures[50].

Thirteen Member States reported exceptions under their PoMs[51]. Exceptions were not always used consistently, even within the same marine region. Whereas some Member States applied exceptions for several descriptors, others did not report an exception even where it was uncertain whether good environmental status would be achieved. In the latter case, it was often argued that the lack of data and knowledge prevented the application and reporting of an exception[52].

(2) Member States' reporting in the second implementation cycle (2018-2024):

The second implementation cycle started in 2018, with Member States expected to submit their updated reports on Article 8 (assessment of status of their marine waters), Article 9

46 As assessed by the Commission in line with Article 12 of the Directive, COM(2014)97, and SWD(2014)49; findings are summarised in COM SWD(2020)60 final, Key stages and progress up to 2019, p.12.
47 15 Member States reported within 90 days of the deadline. See figures in Annex VII, and SWD(2020) 60 final, Key stages and progress up to 2019, p.20.
48 COM SWD (2020)60 final, key stages and progress up to 2019, p.23.
49 7 Member States reported by the deadline, 3 Member States reported up to 6 months after the deadline, and the remaining 13 Member States reported even later. See figures in Annex VII.
50 As shown in Table 12 and Fig. 8 of SWD(2020)61, Member States at least partially addressed a number of descriptors: the introduction of non-indigenous species, commercial fisheries, nutrient input, pressure on seabed habitats, hydrographical changes, contaminants and marine litter.
51 Article 14 of the MSFD allows Member States to apply exceptions, in cases where they cannot achieve the environmental targets or good environmental status through the measures taken – provided they are duly justified and are in one of the categories set out in Article 14.
52 COM SWD (2020)60 fin, key stages and progress up to 2019, p. 40.

(determination of GES), and Article 10 (environmental targets) by mid-October of that year.

These updates built on lessons learned from the first cycle and required Member States to adapt to the new methodological standards set out by the 2017 GES Decision.

For the **second reporting cycle**, the Commission presented a new assessment module as part of its strategy to move towards an integrated electronic reporting and assessment system[53].

This tool was tested for the first time in 2018, with the Article 12 assessments by the European Commission of the updated Article 8, 9 and 10 reports of the Member States. The module has also been used to assess the Article 11 and 13 updates. Detailed figures on the reporting rate during the second cycle are included in Annex VII.

- **Art. 8, 9 and 10 reports (assessing the state of marine waters, GES determinations and environmental targets):**

Reporting by Member States was significantly delayed in 2018, compared to 2012[54]. Most Member States submitted their e-reports after their text reports, with multiple updates. This suggests that, despite the guidance, Member States struggled with the new reporting mechanism and electronic reporting in general.

The Commission's assessment of the Member States' reported information was published in 2022, together with regional reports aggregating the findings within each European marine region[55]. The Commission also published recommendations at both national and regional level[56]. In parallel, the JRC produced 11 technical reports taking a scientific and technical perspective[57].

For the second cycle, the Commission found some progress by Member States, compared to the first reports submitted in 2012. Most provided comprehensive assessments for all MSFD descriptors in their strategies. Also, most Member States (80%) had adopted **at least partially adequate GES determinations** for all descriptors.

However, despite improvements in the coverage of elements and the use of methodological standards (in line with the 2017 GES Decision), the following shortcomings were identified:

- **conclusions on the status of descriptors were lacking** in many reports. Conclusions were rarely provided on how much GES had been achieved.
- the assessment found that **little progress had been made in quantifying GES.** In spite of the 2017 GES Decision, which required the development and use of threshold values and improved the criteria for GES and methodological standards, GES determinations remained mostly qualitative, and lacked the quantitative detail that would enable progress to be clearly measured.

[53] Hosted on WISE-Marine, the online assessment tool harvests the information submitted by Member States to ReportNet as well as the methodological framework to carry out the Commission's assessment of that information; see Annex VI for more details.
[54] With only four Member States reporting in 2018 (and not all electronically) and four Member States reporting as late as 2020 and one in 2022.
[55] European Commission, *Our Oceans, Seas and Coasts*, https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/implementation/reports_en.htm
[56] European Commission, 2022/C 118/01, Commission Notice, as above, and European Commission, SWD(2022) 55 final, as above.
[57] Joint Research Centre, 2021 Marine Strategy Framework Directive - Review and analysis of EU Member States' 2018 reports (https://mcc.jrc.ec.europa.eu/main/dev.py?N=18&O=460)

- **environmental targets often failed to specify or quantify the pressure or impact to be reduced**. Without measurable targets set in the Directive itself, and with very few Member States setting appropriate targets at national or regional level, an assessment of progress towards GES has proven difficult.

For a more detailed analysis on the quality of the reports, see Chapter 4.1 on effectiveness below.

- **Art. 11 reports (monitoring programmes):**

Member States had to update their monitoring programmes by 15 October 2020. In April 2023, the Commission published an assessment of the monitoring programmes reported by the Member States[58]. Similarly to the first implementation cycle, during the second cycle the late reporting of the monitoring programmes was an issue that hampered their timely assessment.

The analysis of the monitoring programmes[59] has shown that, despite efforts made since the previous assessment 6 years ago, there are still information gaps which do not allow the Commission to precisely assess the distance to good environmental status or targets. Closing those gaps would allow us to better assess the effectiveness of the measures undertaken.

Cooperation and coordination within the same marine region also need to be further strengthened, as highlighted by the findings of the assessment. On a positive note, the assessment found the national monitoring programmes to be sufficiently consistent with the monitoring requirements under other EU policies, notably the CFP and the Habitats and Birds Directives.

- **Art. 13 and 14 reports (PoMs and exceptions):**

Member States were supposed to submit their updated PoMs by 31 March 2022. There were some significant delays in reporting, with only five Member States reporting their updated PoMs by this deadline[60], sixteen Member States reporting late[61], and one Member State that had still not reported its programmes by the time of writing this report[62].

It is notable that the time lag between the submission of text reports and e-reports has decreased compared to previous reporting exercises, and has even reversed in some cases, showing the increasing familiarity of Member States with the e-reporting system.

Overall, the assessment of Member States' updated PoMs has shown that, despite progress in some areas, notably in the fight against beach litter, the **MSFD measures still lack specificity and quantification.** It is therefore not possible to ascertain whether the updated PoMs are sufficient to achieve GES and in which timeframe. Still, the Directive is increasingly considered a key driver for additional and new measures, including in other related policy areas, for achieving GES in EU marine waters.[63]

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[58] https://environment.ec.europa.eu/publications/commission-notice-recommendations-2020-updated-reports-article-11-marine-strategy-framework_en

[59] Tornero Alvarez, M.V., et al., Marine Strategy Framework Directive – Review and analysis of EU Member States' 2020 reports on Monitoring Programmes, EUR 31181 EN, Publications Office of the European Union, Luxembourg, 2023.

[60] Belgium, Italy, Romania, Sweden, Finland.

[61] Croatia, Cyprus, Denmark, Estonia, Ireland, Spain, France, Germany, Greece, Latvia, Lithuania, Malta, Netherlands, Poland, Portugal, Slovenia.

[62] Bulgaria

[63] Reference to EU report and SWD assessing Member States' programmes of measures.

3.2.3. Coordination and cooperation

Increased coordination and cooperation across the marine community is a key aspect of the MSFD. This was driven by the development of a common implementation strategy that links the EU institutions with authorities, experts and stakeholders from all Member States and beyond, as well as the regional approach to managing the seas set out in the Directive.

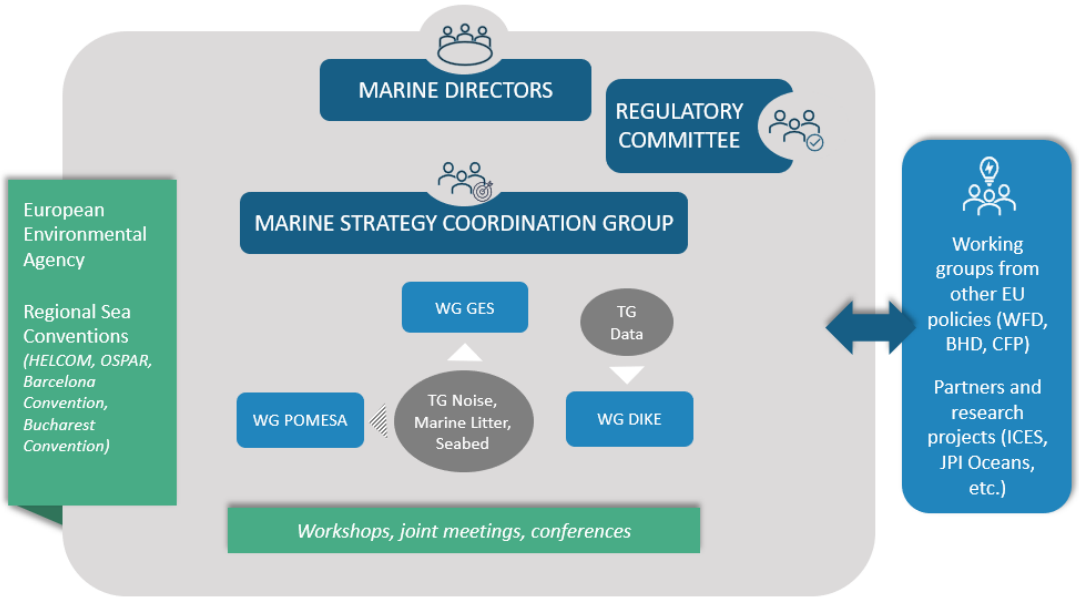
- **Common implementation strategy**

To facilitate the implementation of the MSFD, the European Commission established the **Common implementation strategy (CIS).** The CIS is an informal programme of coordination that brings together the Commission, Member States and other stakeholders involved in implementing the MSFD[64].

It provides a forum for developing a common understanding of the different steps and milestones needed to implement the Directive, to discuss its technical, scientific and socio-economic implications, and to effectively address practical challenges.

The details of the CIS are given in Figure 6 below. Minutes of the CIS meetings and relevant documents are publicly available on the European Commission's CIRCABC platform[65].

Figure 6. The MSFD common implementation strategy



Note: working groups (WGs) on: GES: Good Environmental Status; DIKE: Data, Information and Knowledge in the Environment; POMESA: Programme of Measures and Economic & Social Analyses, and technical groups on data, underwater noise, marine litter and seabed.

Since their creation, the different structures and working groups composing the CIS have

[64] European Commission, *Our Oceans, Seas and Coasts: Implementation of the Marine Strategy Framework Directive*, http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/implementation/index_en.htm

[65] Various documents, available at: https://circabc.europa.eu/ui/group/326ae5ac-0419-4167-83ca-e3c210534a69

worked extensively to produce **guidance documents**[66], aiming to ensure that information and results communicated by each Member State are consistent and comparable.

They have also assisted Member States with their assessment, determinations of GES and monitoring and reporting obligations, and helped the Commission assess the different aspects of the national marine strategies.

- **Regional cooperation**

Cooperation across Member States and with non-EU countries has taken place through the four RSCs for more than 30 years. In Europe, four cooperation structures aim to protect the marine environment and bring together Member States and neighbouring countries that share marine waters.

The RSCs can support the implementation of the MSFD by improving the consistency of implementation both within and across regions, by drawing on the RSCs' experience and established structures to increase the efficiency and effectiveness of national implementation, and by offering practical opportunities for the mobilisation and coordination of third parties.

Table 1 provides an overview of the RSCs relevant for European marine waters. The EU is party to the Convention on the Protection of the Marine Environment in the Baltic Sea Area (HELCOM), the Convention for the Protection of the Marine Environment in the North-East Atlantic (OSPAR) and the Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention).

Work continues to allow the EU to accede to the Bucharest Convention.

Table 1. Overview of regional sea conventions (RSCs)

Overview of the RSCs	Short name	Geographical area	Signatories	Year signed
Convention for the Protection of the Marine Environment in the North-East Atlantic	OSPAR	North-east Atlantic Ocean	Belgium, Denmark, European Union, Finland, France, Germany, Ireland, Luxembourg[67], Netherlands, Portugal, Spain, Sweden and Iceland, Norway, Switzerland, UK	1992 (earlier versions in 1972 and 1974)
Convention on the Protection of the Marine Environment in the Baltic Sea Area	HELCOM	Baltic Sea	Denmark, Estonia, European Union, Finland, Germany, Latvia, Lithuania, Poland, Sweden and Russia	1992 (earlier version 1974)
Convention for the Protection of Marine Environment and the Coastal	Barcelona Convention (UNEP-MAP)	Mediterranean Sea	Croatia, Cyprus, European Union, France, Greece, Italy, Malta, Slovenia, Spain, and Albania, Algeria, Bosnia and Herzegovina, Egypt, Israel, Lebanon, Libya,	1995 (earlier version 1976)

[66] Available on CIRCABC: https://circabc.europa.eu/ui/group/326ae5ac-0419-4167-83ca-e3c210534a69/library/1dfbd5c7-5177-4828-9d60-ca1340879afc

[67] Luxembourg does not report under the MSFD.

Overview of the RSCs	Short name	Geographical area	Signatories	Year signed
Region of the Mediterranean			Monaco, Montenegro, Morocco, Syria, Tunisia, Turkey[68]	
Convention for the Protection of the Black Sea	Bucharest Convention	Black Sea	Bulgaria, Greece, Romania and Georgia, Russia, Turkey, Ukraine	1992

RSCs play a significant role in MSFD implementation and are referred to frequently within the Directive. They are, however, very different in nature and fulfil the role that was assigned to them to a different extent.

The role of the RSCs has been strengthened by the 2017 GES Decision. Where threshold values are not yet laid down, the Decision requires Member States to establish these values through cooperation, for example by referring to existing values or developing new ones under the RSCs. This also applies to missing criteria and methodological standards.

RSCs play a significant role in marine management, due to their long history and their close alignment with the MSFD. They are vital in developing thresholds and indicators and provide much of the knowledge and cooperation structures required for MSFD implementation. The MSFD has built-in provisions to acknowledge this relationship and aims to utilise these synergies to implement the MSFD.

3.3. Enforcement

To date, the Commission has started infringement procedures against several Member States for transposition and reporting issues, rather than instances of bad application.

In 2010, nine Member States received formal notices under Article 258 of the Treaty on the Functioning of the European Union (TFEU)[69] for non-communication of their transposition measures under the MSFD, which led to the subsequent adoptions of eight reasoned opinions [70] and then one referral to the Court[71]. Between 2013 and 2019, 4 non-conform transposition cases were launched under the MSFD[72] and were all resolved.

Eight Member States[73] were also issued formal notices for non-communication of their transposition measures under Commission Directive (EU) 2017/845[74]. All cases were resolved.

Between 2012 and 2022, 39 infringement proceedings were launched for late/non-

[68] The UK territory of Gibraltar was assessed for Mediterranean coherence in the first reporting cycle. It was not reported on for the second cycle.
[69] BG, CY, DE, EL, ES, IE, IT, FI, FR, LV, LT, MT, PL, PT, SI, SE and UK; EE received notice in 2014.
[70] against EE, DE, FR, IE, MT, FI and CY. An additional reasoned opinion was adopted against EE.
[71] A referral was adopted against Poland and then withdrawn.
[72] against LV, IT, DK and FI.
[73] BE, BG, CY, DK, EE, FI, PL and UK (2019).
[74] Commission Directive (EU) 2017/845 of 17 May 2017 amending Directive 2008/56/EC of the European Parliament and of the Council as regards the indicative lists of elements to be taken into account for the preparation of marine strategies.

reporting under the MSFD[75]. In total, these procedures led to the subsequent adoptions of nine reasoned opinions[76] and one referral to the Court against Bulgaria.

In total, only two cases have been referred to the court: a case on non-conform transposition of the MSFD in Poland, which was withdrawn in 2013, and a case concerning Bulgaria's late reporting of their Articles 8, 9 and 10 reports due in 2018, which was recently decided in favour of the Commission[77].

The lack of infringement procedures concerning the incorrect application of the MSFD can be explained by the nature of the obligations imposed by the Directive. Indeed, the Directive leaves significant flexibility to the Member States as regards how to achieve the objectives of the Directive. Flexibility was an intended characteristic of the Directive, and this is the case to date, even if the 2017 GES Decision, by laying down criteria and methodological standards, is more prescriptive than the MSFD itself.[78]

In addition, the Directive does not include an explicit requirement for Member States to establish in their national systems effective, proportionate and dissuasive penalties for infringements of the national rules adopted under the MSFD, as in the Water Framework Directive[79] and other EU environmental legislation[80].

Moreover, the Directive does not require Member States to ensure that the groups affected by the national decisions taken under the MSFD have effective access to justice within their national system, in the event of an infringement of the national rules adopted under the MSFD. Nevertheless, this obligation derives from the Aarhus Convention[81], which entered into force in 2001. These different aspects are of importance when it comes to ensuring the enforcement of the different rules laid down by EU environmental legislation.

Beyond conducting formal infringement procedures, the Commission seeks to promote compliance with the Directive and the underlying 2017 GES Decision through the work of the CIS and the Commission's regular assessment reports, required by Articles 12 and 16 of the MSFD (see sections above).

These Commission reports not only **summarise the information** provided by all Member States, but, more importantly, they include conclusions on **how consistent the different components of the Member States reports are** with the requirements of the Directive and the consistency of marine strategies within the same regions or subregions and across the EU. They also **provide recommendations** to Member States on how to improve the implementation of the MSFD.

4. EVALUATION FINDINGS

To answer the question to what extent the Directive has been successful, this chapter will first assess the **effectiveness, efficiency, and coherence** of the MSFD (Sections 4.1, 4.2

[75] PL (2015); DK, EL, HR, LT, MT, RO, SI (2017); BG, CY, DK, ES, FR, HR, IE, IT, LT, MT, PT, SI and UK (2019).
[76] IE, EL, MT, UK, HR, CY, DK, LT and PT.
[77] Judgment of 28 April 2022, European Commission v Republic of Bulgaria, C-510/20, ECLI:EU:C:2022:324
[78] article 1(1) of the MSFD.
[79] Article 23 of Directive 2000/60/EC.
[80] Directive (EU) 2020/2184, Directive 2010/75/EU, Directive 2006/66/EC, Directive (EU) 2019/904, among others.
[81] Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, done at Aarhus, Denmark, on 25 June 1998.

and 4.3 below), and then consider its **EU added value** and **relevance** to date (Sections 4.4 and 4.5 respectively).

4.1 Effectiveness

Summary findings:

The Directive has only been partially effective. Overall, it has been oriented more towards process than outcome.

On the positive side, an integrated framework is in place. This includes comprehensive marine strategies for all Member States, corresponding GES determinations for the different MSFD descriptors based on Member States' assessments of their marine waters, and integrated monitoring programmes and programmes of measures.

However, the marine strategies and their different components are not fully in line with the requirements. In particular, different standards and methodologies are used for undertaking assessments of marine waters, and GES determinations lack sufficient quantification, instead relying on qualitative descriptions.

Threshold values should have been developed for all descriptors at EU/(sub)regional level, in line with the 2017 GES Decision to allow for quantification of GES in a harmonised manner, but this has only been done to a limited extent.

Furthermore, gaps exist in monitoring programmes and programmes of measures, and marine strategies lack coherence between regions. This is due to (i) the lack of legal prescription in the Directive itself, leaving a high level of discretion to Member States, and (ii) poor implementation of the 2017 GES Decision.

In spite of progress made in meeting its process-based objectives, as well as in improving the status of the marine environment in some marine regions and in relation to certain descriptors, the overall objective of the Directive, i.e. good environmental status for all marine waters, was not achieved by 2020.

Given the overall negative trends in the state of the marine environment (as evidenced in the recent Quality Status Reports issued by the RSCs in 2023), it is unlikely that the Member States' next assessments of marine waters due in 2024 will substantially change this picture.

As shown in Figure 3 (structure of the Directive), the Marine Strategy Framework Directive has an overall objective, a specific objective and several process-based objectives.

Evaluating whether the Directive has been successful or not requires an assessment of the progress towards achieving these objectives.

This section will first look at the attainment of the more specific and process-based objectives of **putting in place an integrated framework**, before considering whether, or to what extent, the overall goal of achieving good environmental status of all marine waters was achieved.

In doing so, this chapter will consider the main factors explaining why and where the Directive has been successful, or where the goals have not been achieved.

4.1.1. Creating an integrated framework for the protection and sustainable use of the marine environment

The achievement of having an **integrated, EU-wide framework** in place to protect the marine environment and sustainably use marine resources is measured against the following five *process-based objectives* of the Directive:

(1) developing comprehensive **marine strategies;**

(2) ensuring **coherence** between **policy and legislative acts**;

(3) setting up a **framework** to **collect data and build knowledge**;

(4) strengthening **regional coordination and cooperation**; and

(5) promoting the integration of the **ecosystem-based approach** in managing the marine environment.

4.1.1.1. Developing comprehensive marine strategies

As explained above (Chapter 2), the MSFD requires Member States to set out marine strategies, consisting of:

(1) assessment of their marine waters;

(2) determination of GES;

(3) establishment of targets;

(4) establishment of monitoring programmes;

(5) development and implementation of a programme of measures.

Member States must report each step to the Commission, as well as complying with other reporting requirements in the Directive. The Commission, for its part, must assess and provide recommendations at each of these reporting rounds.

In the first implementation cycle, Member States have developed each of the required components of their marine strategies and have updated them in the ongoing second cycle.

Between the first and second cycles, clear improvements have been made when determining GES (helped by the adoption of the 2017 GES Decision) and the assessment of environmental status.

However, inadequacies remain, as will be explained in the following sections. More explanation can also be found in **Annex VII**, which provides detailed graphs and figures on the different elements of the marine strategies, showing where Member States are in their implementation today.

(1) Assessments of marine waters and GES determinations (Art. 8 and 9)

Despite the clarification provided through the 2017 GES Decision, which amended the original 2010 GES Decision, and the extensive work under the CIS, **there are still difficulties for Member States in determining and quantifying GES**, as evidenced in their reported information, as assessed by the Commission.

A c**lack of a common methodological approach** at EU, regional and subregional level hindered the development of GES in a coherent and quantified manner in particular during the first years following adoption of the 2017 GES Decision, which requires quantification of GES through the adoption of threshold values. Limited progress has been made since, but the 2017 Decision is still not fully implemented, as explained below. This means that

it is still difficult to appraise how ambitious Member States are when it comes to determining GES and undertaking the assessments of their marine waters, especially for those MSFD descriptors that are not regulated by other (mostly sectoral) EU legal acts (i.e. underwater noise, seafloor integrity, food webs).

For most descriptors/criteria, threshold values for GES were still not set by the planned deadline of 2018[82]. Setting threshold values according to the requirements of the 2017 GES Decision is a complex and lengthy science-based process that requires coordination at subregional, regional or EU level.

With the adoption of the GES Decision in 2017, the time left for Member States to come to agreement on thresholds for the 21 primary criteria for which threshold values were not already set in EU legislation[83] was short.

In turn, this made it difficult for Member States to develop and apply coherent and effective assessment methodologies and to reach conclusions on whether they had achieved GES in 2018.

As all operational provisions of the Directive are, one way or another, linked to the concept of GES, **a broad lack of quantified and measurable GES determination for many descriptors** over the past 15 years has hindered the preparation of effective marine strategies, including quantifiable measures with tangible results on the quality of the marine environment.

Since 2018, a significant amount of work has been invested to adopt these **threshold values and other methodological standards** needed for GES determinations and assessments. Of the six criteria for which threshold values have to be adopted at EU level (through EU cooperation under the CIS)[84], threshold values were finally adopted by the end of 2022 for five of them (fully or partially)[85] and the remaining values are under development[86].At regional level, threshold values for a number of primary criteria were also adopted.

The exact picture of how many threshold values have been developed and are effectively used by the Member States in the process of determining GES will become clearer after they report on their updated GES determinations (Article 9) in October 2024. In February 2024, the Commission published a notice to clarify issues related to the legal status and use of the threshold values for GES set through EU, regional or subregional cooperation[87]. The notice recalls that Member States are expected to use threshold values set through EU

[82] Vasilakopoulos, P., et al. Marine Strategy Framework Directive, Thresholds for MSFD Criteria: state of play and next steps, EUR 31131 EN, Publications Office of the European Union, Luxembourg, 2022.See also up to date overview of Threshold Values in Annex VII.

[83] Such as those related to non-indigenous species, marine litter, underwater noise, species, habitats and food webs.

[84] D6C4, D6C5, D10C1, D10C2, D11C1 and D11C2

[85] D6C4: extent of seabed habitat loss; D6C5: extent of adverse effects on seabed habitats; D10C1: marine litter on the coastline; D11C1: impulsive underwater noise; D11C2: continuous underwater noise.

[86] D10C1: marine litter in the surface layer of the water column and in the seabed; D10C2: micro-litter on the coastline, in the surface layer of the water column and in seabed sediment; D6C5: level of adverse effects on seabed habitats.

[87] Communication from the Commission, Commission Notice on the threshold values set under the Marine Strategy Framework Directive 2008/56/EC and Commission Decision (EU) 2017/848 (C/2024/2078)

or (sub)regional cooperation[88], and can no longer use national thresholds when EU or regional thresholds have been set.

When it comes to the assessment of the state of marine waters (Article 8), Member States that are party to regional sea conventions that produced their own regional assessment reports before the 2018 deadline[89] were found to perform better in terms of adequacy and consistency of their assessments than Member States that are party to a Regional Sea Convention that did not issue such a regional assessment.

These findings suggest that active regional cooperation structures can improve the level of adequacy of Member States' own assessments, but also indicate that the same level of support is not available to all EU Member States.

(2) Environmental targets (Art. 10)

Success in setting **environmental targets, as required by Article 10 of the Directive, is one of the weakest aspects of the marine strategies**. In the second implementation cycle, all Member States have set environmental targets for most descriptors, but **only a small proportion of the reported targets were considered measurable and operational**, and appropriately designed to close the gap towards GES[90].

Member States have rarely specified or quantified the amount of pressure or harmful impact to be reduced to achieve GES. Less than 50% of the targets reported in 2018 focused on reducing pressures and impacts, and most of the targets (across descriptors) were not quantitative. This is partly, but not exclusively, due to the lack of quantitative GES determinations, as explained above.

However, also in cases where the objective to achieve GES is clear and sufficiently quantified, or where targets have been set under other frameworks, Member States have still been reluctant to re-use these targets under the MSFD[91].

Despite guidance, in their marine strategies Member States have often **mixed-up GES determination (Art. 9) with the setting of environmental targets (Art.10)**. Such targets either mirror the GES determination or present a more refined one, implying a certain quality level to be achieved, rather than a path of further reducing the associated pressure. Also, the **link between targets and measures (Art. 13) is often missing**.

This suggests a lack of clarity in the Directive on the role of targets as an operational tool, to be used in conjunction with the programme of measures, for managing human activities and their pressures at sea, to increasingly improve the environmental status of marine waters.

The limited improvement between the two reporting cycles suggests that this step of the marine strategy remains challenging for Member States[92]. In interviews, Member State

[88] Except when those are set for a criterion that the Member State decides not to use in their assessment of good environmental status.
[89] Such as OSPAR's 2017 Intermediate Assessment (https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/) and HELCOM's 2017 HOLAS 2 report (https://helcom.fi/helcom-at-work/projects/holas-ii/)
[90] COM SWD(2020)60, Key stages and progress up to 2019, p.15. For an up-to-date overview of environmental targets adopted by Member States and their relation to achieving GES, see Annex VII.
[91] Such as for D3 – commercial fish, where the GES determination should be based on existing quantifiable concepts such as maximum sustainable yield and spawning stock biomass
[92] Commission Staff Working Document, Background document for the Marine Strategy Framework Directive on the determination of good environmental status and its links to assessments and the setting of environmental targets – accompanying the report from the Commission to the European Parliament and the

experts highlighted the difficulties in setting quantitative targets, even though these would help drive measures within their national institutional frameworks[93].

Table 2. Targets classified as quantitative and not quantitative for each category of targets

Type of target	Quantitative	Non-quantitative
Targets for pressure reduction	79	75
Targets linked to threshold values	61	91
Targets linked to trends	51	106
Targets linked to measures:	75	80
-Targets linked to knowledge gaps	7	147
-Targets linked to monitoring and assessment needs	4	147
-Targets linked to awareness-raising	0	151

Source: 2023 JRC Report on environmental targets under the MSFD: A compilation of information and analysis results on targets under the MSFD.

(3) Monitoring programmes (Art. 11)

The next step in preparing marine strategies is **establishing and implementing coordinated monitoring programmes (Article 11)** for the assessment of the environmental status of the seas, the distance to GES and the progress towards the achievement of the targets.

In general, monitoring programmes have been found to be more complete for GES criteria also covered by other existing legislation, such as the WFD, the CFP and the Nature Directives (Birds and Habitats Directives)[94].

Although monitoring programmes under MSFD heavily draw on what has already been done under existing EU and regional policies (RSCs), they fill significant gaps, especially for those additional topics not yet covered by existing mechanisms, such as underwater noise and non-indigenous species.

Although there has been progress between the first and second implementation cycles, **several weaknesses** remain in Member States' MSFD monitoring programmes[95].

- The data reported for the various elements and parameters to be monitored, i.e. those set out in the 2017 GES Decision[96] and in Annex III of the Directive[97], lack consistency across Member States, making any comparison or assessment of monitoring methods and programmes very difficult.

Council on the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC), SWD/2020/62 final

[93] See Annex V – stakeholder consultation synopsis report.

[94] For example descriptors D1(biological diversity), D3 (fish populations) and D5 (eutrophication).

[95] Commission Notice on recommendations on the 2020 updated reports for Article 11 of the Marine Strategy Framework Directive (2008/56/EC), C(2023) 2203 final, Brussels, 4.4.2023; Tornero Alvarez, M. V., et al., Review and analysis of EU Member States' 2020 reports: Monitoring programmes (MSFD Article 11), Publications Office of the European Union, Luxembourg, 2022.

[96] As required under Article 3 of the 2017 amended Commission GES Decision and specified in the Annex to the Decision.

[97] As required under Annex V of the MSFD on monitoring programmes

- Most monitoring programmes are designed to cater for monitoring pressures at sea and at source. They are less suitable for measuring the impacts of those pressures on ecosystems.
- Common monitoring programmes across sectors and regions are inconsistently reported. This indicates that Member States are not yet making the most of the links with other sectors, either at national or regional level, leading to inefficiencies.
- Monitoring programmes do not cover EU waters homogeneously, focusing mostly on coastal areas, rather than offshore waters.
- The monitoring programmes are not always linked to the environmental targets, or to the measures. This is partly due to the timing of the different steps (with monitoring programmes being established and implemented before the development of programmes of measures).
- There are many gaps in the Member States' monitoring programmes linked to the lack of agreed approaches or methodological standards at EU or regional level for assessing the different criteria or descriptors.
- Systematic use of new data collection and monitoring techniques, such as remote sensing technologies, including satellite observations, digital technologies or eDNA, is still limited.
- Despite the obligation under Article 19(3) to provide access and user rights for the data collected by the MSFD monitoring programmes, the primary data from a number of Member States is hard or impossible to access.

Because of these weaknesses, **the data collected by Member States through MSFD monitoring programmes are often not comparable**, which makes it difficult to compare the **assessment results** across Member States. Despite these shortcomings, it should be recognised that coordinated environmental marine monitoring in the EU under the MSFD and with the four regional sea conventions is a globally unique achievement.

(4) Programmes of measures (Art. 13)

The final and most operational step in implementing the marine strategies is the **programmes of measures** (PoMs). In recent years, i.e. between the first and second implementation cycles, Member States have made significant efforts to develop their MSFD PoMs by integrating different national, EU and international policies and covering existing gaps with new cost-effective measures[98].

In the first implementation cycle, Member States' PoMs only partly covered the pressures that needed to be reduced to achieve GES and environmental targets for all MSFD descriptors. In addition, the selection and implementation of measures predominantly focused on 'existing measures' (i.e. those developed under other sectoral legislation). This raised concerns that the PoMs were neither ambitious enough nor sufficient to achieve GES[99].

In the second cycle, more measures have been taken specifically for the purpose of complying with the MSFD, and progress has been made in some key areas, notably marine

[98] See Annex VII of this report, which provides an overview table of the adequacy of the PoMs (under Article 13 and 14), 2nd cycle.

[99] Report from the Commission assessing Member States' PoMs under the Marine Strategy Framework Directive, COM/2018/562 final, Brussels, 31.7.2018

litter[100]. Measures reported specifically for MSFD and not covered by other legislative frameworks generally tend to be of higher quality and more innovative than those covered by other policies.

Still, for many descriptors, **it remains difficult to gauge to what extent, and within which timeframe, the measures will reduce impacts on the marine environment** and so achieve GES. This is partly due to the lack of clear quantification of GES, as well as the lack of quantification of the measures themselves[101].

In both cycles, identified insufficiencies in the coverage of measures often concern MSFD descriptors for which knowledge was limited at the time the Directive was adopted (such as underwater noise and food webs). Member States also find it difficult to assess the effect on the marine environment of the different measures they have put in place.

Even in the case of long-standing measures adopted under the WFD and necessary to achieve GES for marine waters for eutrophication and contaminants, Member States still fail to adequately assess the contribution of these measures to the achievement of GES and therefore the gaps that remain to be filled[102].

This is partly because it is difficult to predict the timing and full practical implications of any measure, let alone the cumulative benefits of a whole set of measures. It is also because the Directive requires Member States to **update their assessment of environmental status only 2 years after the first PoMs were adopted.** This may not leave enough time to see and understand the effects of measures taken, or for them to be reported in the next assessment.

A third factor making it difficult for Member States to assess the effectiveness of their measures on the state of their marine environment may be that, for a number of topics, collective action is necessary to address certain issues that are transboundary in nature.

The MSFD makes provision for this particular case through its Article 15, which gives Member States the option to notify the Commission where an issue impacting the environmental status of their marine waters cannot be tackled by national measures or is linked to another EU policy or international instrument, and make recommendations for EU-wide measures.

If deemed adequate, the Commission could then address the recommendations by adopting appropriate EU-level measures. This option has, however, never been applied adequately in the first two implementation cycles of the MSFD, in view of the conditions and procedure tied to using it.[103]

Marine protected areas

[100] Measures on marine litter reported by Member States in their second PoMs were found to be overall more adequate than measures for other descriptors (10 Member States out of 17 with "very good" or "good" measures on marine litter), see *Report on the Commission's assessment of the Member States' programmes of measures*, COM(2025) 3, as above.

[101] *Report on the Commission's assessment of the Member States' programmes of measures*, COM(2025) 3, as above.

[102] The second MSFD PoMs were assessed in coordination with the third River Basin Management Plans under the WFD. See reports COM(2025) 2 and COM(2025) 3.

[103] In July 2015, Portugal asked the Commission to address the North East Atlantic Fisheries Commission to extend the ban to other EU and non-EU vessels, under Article 15 of the MSFD. In 2016, the Commission requested Portugal to provide further scientific studies. As the Portuguese authorities did not follow-up, the request was closed by the Commission.

Among the types of measures adopted by Member States to protect their marine environment, **marine protected areas (MPAs)**[104] and other spatial protection measures adopted under Article 13(4) MSFD constitute one of the most important biodiversity conservation and management tools.

The Birds and Habitats Directives have been the main drivers for the creation of MPAs in EU seas (see Section 4.3.1, and Annex VIII). With the adoption of the MSFD in 2008, the need for MPAs has increased and, complementing the feature-based approach of the Birds and Habitats Directives, the MSFD enabled the designation of MPAs with **broader conservation objectives**, such as protecting seafloor integrity or food webs[105].

The adoption (in 2020) of the targets for the Biodiversity Strategy for 2030 and (in 2022) of the Kunming-Montreal Global Biodiversity Framework have strengthened the need to expand the MPA network in EU waters, in particular offshore. This has led to an **increased uptake of spatial protection measures in the context of the PoMs in the second implementation cycle**. In the face of climate change MPAs remain a key tool to retain and restore ecosystem resilience through the protection of structure and function of marine habitats.

However, the **ineffective management of these MPAs** is a major limiting factor in the progress towards protection and restoration of marine biodiversity. For instance, only 3% of the area of all European MPAs is currently covered by the necessary fisheries management measures to achieve the related conservation objectives[106].

4.1.1.2. Ensuring policy and legislative coherence

The MSFD was designed to work in tandem with other key pieces of EU law, notably the Water Framework Directive in relation to freshwater and coastal water protection and the Habitats and Birds Directives in relation to ecosystems and species protection[107]. The correct implementation of those policies contributes to achieving the MSFD objectives.

By setting in place an integrated management framework for the sustainable use of the marine environment, the MSFD has influenced EU maritime policy instruments and initiatives, including the CFP, the Maritime Spatial Planning Directive and other policies governing the EU sustainable blue economy sector, which all refer to the MSFD objectives or principles.

It should also be recognised that the conceptual framework for assessing good environmental status, and the data collected on the state of marine species/habitats and on the pressures that affect them, have contributed to **several important legislative developments**.

- Data on marine and beach litter collected for the purposes of MSFD implementation allowed policymakers to heed public concern and swiftly adopt

[104] See Annex VIII for an explanation of the concept of Marine Protected Areas.
[105] Such as the Dutch Central Oyster Grounds and Frisian Front Marine Protected Areas, see: Ministerie van Infrastructuur en Milieu & Ministerie van Economische Zaken, *Mariene Strategie voor het Nederlandse deel van de Noordzee 2012–2020 (deel 3)*. Government of the Netherlands, 2015. Retrieved from: https://www.noordzeeloket.nl/beleid/europese/achtergrond/documenten-mariene/@168123/mariene-strategie-2/.
[106] Analysis done by the EEA based on data provided by Member States. Presentation of results at the 2nd Meeting of the special group to support the implementation of the Marine Action Plan on 18 June 2024, available on CIRCABC: https://circabc.europa.eu/ui/group/8ba8dc69-4226-4d6d-92d7-9ba25b40fc50/library/c83a5239-53d5-4880-91f1-b5a2ca30f567/details
[107] Annex VII provides a detailed overview of EU legislation most relevant to MSFD.

new policy and legislation on plastic waste, in particular the **Single-Use Plastics Directive**.

- In the Commission proposal for a **revised Urban Wastewater Treatment Directive**, the integration of micropollutants and microplastics for treatment was derived from the analysis of MSFD assessment reports.
- The new **Nature Restoration Regulation**[108] developed its list of marine habitats to be restored to correspond to the EUNIS-classified habitat types of the 2017 GES Decision, departing from the previous classification of marine habitats under the Habitats Directive. In addition, the preparatory work for the Nature Restoration Law could build on the extensive scientific work done in the context of the MSFD for developing marine indicators and marine habitats[109].

At the same time, inconsistencies exist with other maritime policies, such as those related to fisheries, as well as agriculture and energy policies, where certain policy choices can at times lead to an imbalance across economic, social and environmental interests.

Stakeholders have indicated that addressing these consistency concerns will be fundamental for successfully implementing the MSFD[110]. Targeted survey respondents (chiefly MSFD implementing authorities, and research institutions or academics) highlighted inconsistencies between MSFD and EU sectoral policies, including the CFP, Maritime Spatial Planning and the Common Agricultural Policy[111]. Similar inconsistencies were pointed out by stakeholders responding to the public consultation[112].

A detailed analysis of the coherence between the MSFD and relevant EU legal and policy frameworks is provided in Section 4.3 ('policy coherence').

4.1.1.3. Setting up a knowledge framework to collect data and build knowledge

Both the collection of data and the development of knowledge on the marine environment are among the most notable achievements of the MSFD.

[108] Regulation (EU) 2024/1991

[109] Daniel Hering et al., Securing success for the Nature Restoration Law. Science 382, 1248-1250(2023). DOI:10.1126/science.adk1658.

[110] See Annex V – synopsis report.

[111] 26.7% of respondents identified inconsistencies with CFP, 13.8% with MSP, 9.8% with Energy Union Strategy, 15.5% with EU Strategy on Offshore Renewable Energy, 22,3% with Common Agricultural Policy – see Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, Final Report, January 2023, p214. The majority of stakeholders responding to the targeted consultation were MSFD implementing authorities (41% of the total respondents) and academic/research institutions (39%). The remaining respondents were NGOs (8%), RSC secretariats (6%), EU/international organizations (3%) and business associations (3%).

[112] 44% of respondents identified inconsistencies with CFP, 31% with MSP, 22% with Energy Union Strategy, 32% with EU Strategy on Offshore Renewable Energy, 35% with Common Agricultural Policy. - See *Public Consultation as part of the review of the MSFD – Summary of results* p.25, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:Ares(2022)370890. Stakeholders responding to the public consultation were mainly EU citizens (42% of total respondents), NGOs (18%), public authorities (15%). Smaller groups were represented by academic/research institutions (8%), environmental organizations (5%), business associations (5%), companies (4%), trade unions (1.5%), non-EU citizens (0.5%).

Although there were already some forms of data collection on the marine environment[113] before the MSFD existed, it has put in place a **systemic and regular data collection framework** in relation to the **11 GES descriptors**. As such, it has generated vast quantities of data, which have contributed to a **better understanding of status, pressures and impacts** in the marine environment.

Research and knowledge-building on the state of the marine environment in Europe before the MSFD was adopted played a key role in developing the Directive's ambitious legal framework. Since its adoption, research on the marine environment[114] has substantially increased, partly in support of MSFD implementation.

In its 2020 implementation report[115], the Commission explains in more detail how the MSFD seeks to provide a harmonised framework for the continuous improvement of data collection[116]. The Directive has also ensured that **Member States collect data in areas where there was previously very little knowledge** (for example, underwater noise and marine litter). This has created opportunities for new research initiatives and has also helped to fulfil other EU and international obligations (e.g. in relation to SDG14).

Stakeholders largely agree that the MSFD has improved the overall knowledge of the state of Europe's marine waters, including on issues not monitored before.91% of stakeholders responding to the public consultation have recognised the important contribution of MSFD to the improvement of knowledge on the marine environment[117]. 95% of respondents to the targeted survey believe that knowledge on the state of marine waters was improved by MSFD[118].

With the adoption of the 2017 GES Decision, data collection and monitoring efforts have focused on the information needed to cover the different GES criteria, listed in the Decision. Translating GES into measurable items, identifying parameters and setting objective values is essential, not only for measuring progress but also to improve coordination of monitoring within a specific region.

[113] In the context of the Habitats Directive, those undertaken by ICES in northern Europe, and data collection efforts under the Regional Seas Conventions.

[114] Notably at EU level, through research framework programmes, such as Horizon Europe and its Ocean and Waters Mission, but also through the use of LIFE, EMFAF, Interreg and other EU funds.

[115] Report from the Commission on the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC), COM/2020/259 final

[116] Commission 2020 Implementation Report, section 2.2., page 4.

[117] 132 respondents out of 145, see Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, p265. Stakeholders responding to the public consultation were mainly EU citizens (42% of total respondents), NGOs (18%), public authorities (15%). Smaller groups were represented by academic/research institutions (8%), environmental organizations (5%), business associations (5%), companies (4%), trade unions (1.5%), non-EU citizens (0.5%)

[118] 91 respondents (out of 96), the majority of which described the improvement of knowledge as 'significant' (57%) or 'moderate' (32%). See Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive,* p92. The majority of stakeholders responding to the targeted consultation were MSFD implementing authorities (41% of the total respondents) and academic/research institutions (39%). The remaining respondents were NGOs (8%), RSC secretariats (6%), EU/international organizations (3%) and business associations (3%).

Despite these achievements, significant gaps remain in the way data is collected and used[119]. In addition to the overall need for more data, the following challenges have been identified:

- **Differences in assessment methodologies, terminologies, definitions and standards** across Member States, regional sea conventions and policy areas (e.g. for the assessments of 'favourable conservation status' under the Habitats Directive compared to GES under the MSFD – *see also Section 4.3.1*) lead to differences in data requirements.
- Competent authorities are not always informed of or familiar with relevant data flows under other mechanisms, e.g. the Data Collection Framework for Fisheries and the Copernicus Marine Environment Monitoring Service. Moreover, **the observational and monitoring services** provided under these mechanisms, as well as the **data collection, are not always well aligned with the needs of the MSFD**[120].
- There is a **lack of alignment of data collection methods for monitoring and collecting data** across EU seas and across topics. The data collected is often not of sufficient quality, has limited interoperability and in turn does not allow the Commission to compare assessment results across EU seas.
- Based on the principles and requirements of the INSPIRE Directive, Article 19(3) of the MSFD requires Member States to make data and information accessible to the Commission and the EEA from their assessments of the status of their marine environment and their monitoring programmes. The Directive, however, does not explicitly state the format to be used to submit this data and **accessibility has been a challenge.**

Due to the above-mentioned obstacles, Member States have not been able to provide clear conclusions as to whether they have achieved GES for their marine waters for the different descriptors. This in turn leads to difficulties in communicating to the public and policymakers on whether or to what extent EU marine waters have good environmental status. It has also hampered the process of modelling and anticipating risks to the marine environment and the development of future scenarios in terms of pressures, impacts and defining mitigation measures.

These issues are compounded by the development of an **ambitious reporting infrastructure** at EU-level, requiring significant amounts of information to be reported by Member States to cover all the aspects of the Directive and the GES Decision. This was meant to improve marine knowledge in line with the policy framework at the time[121].

It turned out that the Member States, who had originally agreed to the reporting system, did not always have the administrative capacity to deliver this ambitious approach. Therefore, the shortcomings in the resulting data (see above) were not necessarily meeting the Commission's needs in terms of evaluation, enforcement and communication.

[119] Based on results from the 2018 and 2020 reporting obligations under Articles 8, 9, 10 and 11. Member State reports due in October 2024, reporting under Article 8, 9 and 10, may show improvements in terms of the implementation of Commission Decision (EU) 2017/848.
[120] European Commission, SWD(2020) 60 final, as above, p. 28.
[121] COM(2010) 461: Marine Knowledge Communication (https://maritime-forum.ec.europa.eu/document/download/7f13c78b-b9ba-41a0-8ccb-fb82261555eb_en?filename=com_2010_461.pdf)

In addition, the lack of alignment of the timelines for environmental reporting, which are of critical importance for assessing the state of marine ecosystems, also lead to difficulties (see Chapter 4.3.1)[122].

Over the years, the CIS has addressed some of these issues in its guidance and reference documents, as well as through the uptake of e-reporting. This work is expected to improve comparability and increase effectiveness of data reporting.

Common methodologies and standards for monitoring and assessing marine ecosystem components and pressures have been developed[123]. For instance, new and sophisticated analytical methodologies to screen pollutants of emerging concern for the marine environment are now in place[124].

In addition, successful case studies have shown the potential of cooperation and links between the MSFD community and the European Marine Observation and Data Network (EMODnet), as described below.

MSFD & ocean data

Since the MSFD's wide scope requires assessments of all possible interactions between human activities, pressures and marine ecosystems, the data collected can serve different purposes, including maritime spatial planning, transport, sustainable tourism, fisheries and aquaculture, energy production, climate-resilience, research, etc. The MSFD is therefore closely linked to the development of the **European Digital Twin of the Ocean** (DTO)[125]. There are significant potential synergies between the MSFD and European platforms/programmes for producing and sharing environmental information, such as **Copernicus**[126], which could reduce the burden associated with data reporting. Unfortunately, this potential is currently not exploited to its fullest[127].

Ensuring the highest standards of quality for the data collected for future MSFD assessments is a key challenge. In this regard, the work done by the **European Marine Observation and Data Network** (**EMODnet**)[128] could have the potential to substantially increase the quality, interoperability and comparability of the data collected by Member States[129]. Due to the lack of accessibility and availability of primary data, there are currently limited **links between**

[122] In particular, the different timelines for reporting under the Water Framework Directive and the Habitats Directive. A more detailed analysis is provided in Chapter 4.3.1.

[123] See for instance, MSFD Technical Group on Marine Litter, Galgani, F., et al., *Guidance on the Monitoring of Marine Litter in European Seas An update to improve the harmonised monitoring of marine litter under the Marine Strategy Framework Directive*, EUR 31539 EN, Publications Office of the European Union, Luxembourg, 2023

[124] Tornero V, Hanke G. *Potential chemical contaminants in the marine environment: An overview of main contaminant lists*.

[125] This initiative was announced by President von der Leyen at the One Ocean Summit in Brest in February 2022.

[126] The Copernicus Programme is the European Union's Earth Observation Programme, looking at our planet and its environment for the ultimate benefit of all European and global citizens. CMEMS (Copernicus Marine Service) transforms the wealth of satellite and in situ data into timely and actionable information providing regular and systematic reference information on the physical and biogeochemical state, variability and dynamics of the ocean and marine ecosystems for the global ocean and the European regional seas.

[127] The limited use of satellite data for monitoring MSFD D5 was also noted by the JRC in one of its recent reports in relation to MSFD D5 (eutrophication), see: Araújo et al. Eutrophication in marine waters: harmonization of MSFD methodological standards at EU level, EUR 29854 EN, Publications Office of the European Union, 2019, Table 6, pg. 16

[128] See Annex VI for a description of the functioning of EMODnet.

[129] See the recent evaluation of EMODnet, Commission SWD 2023/281, pg. 23.

EMODnet and the EEA portals, including ReportNet, where the Member States report the MSFD assessment results.

4.1.1.4.Strengthening regional coordination and cooperation

Evidence shows that **regional cooperation has increased since the MSFD came into force**[130]. Member States within a marine region interact more with their neighbours, especially if they are EU Member States too, and this is shown in improved **regional coherence** between marine strategies, notably through the regional sea conventions (RSCs) highlighted in the Directive.

The different analyses of Member States' reporting since 2012 point to the use of increasingly similar and compatible assessments, methodologies, and targets among Member States in same marine region, suggesting that **efforts have been coordinated, with variations across the marine regions**.

In the context of the 2018 reporting exercise (start of the second implementation cycle), Member States in the north-east Atlantic Ocean seem the most coordinated compared to other marine regions. The analyses also show that regional coordination has improved in the Mediterranean between the first and second cycle of MSFD implementation[131]. By the end of the cycle in the context of the update of the Member State's PoMs in 2022, Member States sharing waters in the Baltic Sea however showed a higher level of coherence and quality in the design of their measures than Member States in other regions.[132]

In addition, the **MSFD has increased the level of coherence in terms of methodologies and standards used, and objectives set across the regions**, through the work done in the context of the CIS and the RSCs. The transboundary nature of certain pressures/activities (e.g. shipping, non-indigenous species), or of marine life (e.g. migratory species, broad habitat types), makes it particularly important that they are assessed, and managed, on a transnational basis**.**

At the same time, despite the EU-wide nature of the Directive, the emphasis on regional coordination has enabled to capture the differences in environmental and socio-economic conditions across European seas. The MSFD therefore offers a flexible framework where monitoring, assessments and measures can be undertaken at the most appropriate scale. This also benefits those Member States that are a contracting party to more than one RSC.

Cooperation between Member States and with countries outside the EU has taken place mostly through the four RSCs for over 30 years. RSCs play a significant role in MSFD implementation and are referred to frequently within the Directive. However, **the success of regional cooperation varies by marine region**.

This depends not only on the number of non-EU countries in the marine region, which are not legally bound by the MSFD[133], but also on the extent to which the RSC actively

[130] As highlighted in the Focus Groups, organised as part of the stakeholder consultation activities, see Annex V (synopsis report).
[131] Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, p84.
[132] Report from the Commission on the *Commission's assessment of the Member States' programmes of measures*, COM(2025) 3, as above.
[133] In HELCOM, one contracting party is not an EU Member State; in OSPAR, four contracting parties out of 16 are not EU Member States; in the Barcelona Convention, eight contracting parties out of 22 are EU Member States, and the EU as a whole is also a contracting party to the Convention; in the Black Sea

supports countries' implementation of the MSFD.

Stakeholders generally consider OSPAR and HELCOM to be the most advanced in their coordination of MSFD implementation, and UNEP-MAP (responsible for coordination of the Barcelona Convention and its protocols) to a lesser degree.

The majority of stakeholders responding to the public consultation acknowledged the importance of MSFD in strengthening coordination to manage the marine environment in the NEA (95%) and Baltic (98%) regions, while less of them recognised this outcome of MSFD in the Mediterranean (79%) and in the Black Sea (43%) regions[134].

The Black Sea Commission has been the least active on MSFD matters. It has been faced with ongoing geopolitical challenges, which have recently exacerbated in the context of the war in Ukraine, which also affected HELCOM in different ways, requiring changes to its governance framework and operational rules.

In addition, while most RSCs have made efforts to align themselves with the MSFD, these remain non-EU structures that set their own agenda, objectives and levels of ambition. The RSCs also have **limited enforcement mechanisms,** and the **process governing the interaction between EU policies and RSCs is not well defined**.

Despite recognition of the need for regional cooperation and coordination between Member States, the MSFD does not provide rules on the interactions between the EU and the RSCs or govern structures established at regional sea level[135].

However, with the adoption of the 2017 GES Decision, and the legal requirement to set threshold values for several criteria at the (sub) regional level, some of the RSC activities now carry a higher weight.

4.1.1.5. Promoting the integration of the ecosystem-based approach for the sustainable use of the marine environment

As provided in the MSFD, the **ecosystem-based approach** aims to ensure that marine resources in EU waters are used in a truly sustainable manner. Specifically, this means that human activities likely to have an impact on the marine environment should be managed in a way that ensures their cumulative pressures are kept within *'levels compatible with the achievement of good environmental status'* and that *'the capacity of marine ecosystems to respond to human-induced changes is not compromised'.*

The ecosystem-based approach for the sustainable use of the marine environment constitutes one of the most important links between the MSFD, the Maritime Spatial Planning Directive ('MSPD') and the CFP (also explained in Section 4.3.1).

Convention, two contracting parties out of six are EU Member States and the EU itself is not a contracting party.

[134] Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, p88.

[135] Van Tatenhove, J. P.M. et al., 2014, 'Regional cooperation for European seas: Governance models in support of the implementation of the MSFD', *Marine Policy*, 50, 364-372, https://doi.org/10.1016/j.marpol.2014.02.020; O'Higgins, T., Verling, E., & Cronin, R., 2020, 'Analysis of national, regional and EU MSFD institutions and governance structures: challenges and opportunities for a risk-based approach in the North East Atlantic', *Risk-Based Approaches to Good Environmental Status (RAGES),* Project Deliverable 2.2, https://www.msfd.eu/rages/D2_2.pdf

Despite the MSFD being considered a successful example of the ecosystem-based approach worldwide[136], the objective of applying this approach to sustainable spatial planning and management of human activities at sea has not been fully achieved in practice. Stakeholders at both Member State and EU level acknowledged in focus groups that Member States struggle to define the concept and carry it out in practice[137].

A major limiting factor is the absence of clearly defined *'levels compatible with the achievement of good environmental status'* in the text of the MSFD itself, notably in Article 1(3) where the requirement for an ecosystem-based approach is laid down. In practice, these levels are provided through the setting of threshold values under the 2017 GES Decision for the different criteria and descriptors.

Through this process, the MSFD sets the seas' ecological boundaries or carrying capacity by defining the limits of what marine ecosystems can withstand in terms of cumulative pressures from human activities while still being in a good status, both in the short and long term. In other terms, it defines what 'sustainable' means for the marine environment.

This process is still ongoing more than 5 years after the adoption of the Decision, for the reasons explained in the previous section (4.1.1.1).

In principle, the MSFD does not regulate specific sectors and human activities directly, except for those related to research and the monitoring and assessment of data. Therefore, the capacity of MSFD national authorities to apply the ecosystem-based approach in practice may be limited, as they may lack the adequate tools to manage the collective pressure of human activities on marine ecosystems.

To guide Member States in their interpretation of the ecosystem-based approach when implementing the MSPD, guidelines were developed by experts in the field of maritime spatial planning and environmental management[138]. It is important to note that strategic environmental assessments also play a major role in making a maritime spatial plan 'ecosystem-based' (see Chapter 4.3.1).

Different interpretations of the concept of 'sustainability' have also led to different levels of ambition in implementing the ecosystem-based approach at sea. A 'strong sustainability' perspective, such as the one provided in the MSFD, acknowledges that '*economic goals can only be pursued if the basic societal needs are fulfilled which, in turn, can only be achieved within the limits of a healthy environment'*[139].

This interpretation of sustainability and of the ecosystem-based approach supports the achievement of good environmental status by ensuring that human activities can keep operating in the marine environment, as long as they collectively respect the ocean's

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[136] European Commission, COM(2020) 259 final, as above, p. 4 and interviews with DG ENV, EU Bodies Focus Group, in Milieu Consulting, *Support to the evaluation of the Marine Strategy Framework Directive*.
[137] In Focus Groups (EU Bodies; Science-Policy; NGOs), see Milieu Consulting, *Support to the evaluation of the Marine Strategy Framework Directive*, p96 and 97.
138 European Commission, European Climate, Infrastructure and Environment Executive Agency, Ruskule, A., et al., *Guidelines for implementing an ecosystem-based approach in maritime spatial planning – Including a method for the evaluation, monitoring and review of EBA in MSP*, Publications Office, 2021
[139] As indicated in the 2021 Guidelines for implementing an ecosystem-based approach in maritime spatial planning guidance: '*Strong sustainability, with a focus on systems, presents the three dimensions as nested and confers different sizes and weightings to them. The consequence is that economic goals can only be pursued if the basic societal needs are fulfilled which, in turn, can only be achieved within the limits of a healthy environment. This implies that the environmental goals should take precedence, followed by the social and economic goals. Decision-making should thus always occur within the environmentally safe and socially just space. In practice this implies that* ***environmental thresholds*** *are not exceeded'*

ecological boundaries and allow the preservation and restoration of healthy marine ecosystems and the services they deliver to society, from food provision to carbon storage.

However, as shown in the coherence chapter below, policies relevant for managing human activities at sea may be based on an interpretation of sustainable development that does not necessarily consider a healthy marine environment as a precondition.

4.1.2. Progress towards achieving the overall goal of good environmental status

Despite the major achievements mentioned in the previous paragraph in relation to the Directive's process-based objectives, **the Directive's *overall goal* of good environmental status of EU seas by 2020 has not been met to date**.

In 2020, the European Commission concluded that progress in reaching good environmental status has not been fast enough to cover all aspects of the Directive in all EU waters by the legal deadline [140]. In the same year, the Court of Auditors supported this conclusion by stating that EU action has not returned seas to good environmental status[141].

74% of respondents to the public consultation on the review of the MSFD described the state of Europe's marine environment as 'not good'[142], and most respondents (60%) find that it has largely deteriorated in the last decade[143].

This is supported by scientific assessments of the state of EU marine waters and marine ecosystems, including those by the European Environment Agency (see also **Chapter 3** and the detailed **overview per descriptor provided in Annex VII**[144]).

Member States' 2018 assessments of progress towards GES, based on their own GES determinations for their marine waters, paint a slightly more optimistic picture, with several Member States reporting that they have achieved or partially achieved GES[145].

However, the Commission found that Member States' **GES determinations were not sufficient to encourage the necessary changes for clean and healthy seas**. Therefore, even when Member States report they have achieved GES according to their own determinations, there is uncertainty as to whether this actually means that the environment is in a 'good status'.

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[140] European Commission, COM(2020) 259 final.

[141] Special Report 26/2020 Court of Auditors: 'Marine environment: EU protection is wide but not deep': https://op.europa.eu/webpub/eca/special-reports/marine-environment-26-2020/en/

[142] Stakeholders describing the state of marine environment as "not good" were distributed as follows: 83% of responding EU citizens (n=87), 94% of NGOs (n=36), 43% of public authorities (n=30), 59% of research institutions (n=17), 100% of environmental organizations (n=10), 56% of business associations (n=9), 44% of companies (n=9), 33% of trade unions (n=3). See *Public consultation as part of the review of the Marine Strategy Framework Directive (MSFD) - Summary of results December 2021* – p8, Figure 6. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:Ares(2022)370890.

[143] *Public consultation as part of the review of the Marine Strategy Framework Directive (MSFD) - Summary of results December 2021*- p.9, Figure 7. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:Ares(2022)370890.

[144] Marine biodiversity decline across Europe's seas is evidenced in 'The European environment - state and outlook 2020' (https://www.eea.europa.eu/soer-2020/intro), 'The IPBES regional assessment report on biodiversity and ecosystem services for Europe and Central Asia' (https://ipbes.net/assessment-reports/eca), and further references and details are provided in SWD(2020) 61.

[145] Information reported under the 2nd implementation cycle showed that not all Member States reached a conclusion on status (i.e. whether GES is achieved or not) for all MSFD descriptors and criteria. See Table 1 summary of the state of environment (by descriptor) in Section 3.1.

The reasons for the failure to reach GES by 2020 vary.

Stakeholders and literature point out that the Directive is still relatively new, and the 2020 deadline, which resulted from a political compromise at the time of its adoption, was overly ambitious, given that improvements to environmental status may take years or even decades to become evident.

Other factors include:

- ineffective PoMs, resulting in an insufficient level of protection and conservation for the marine environment;
- inadequacy of the implementation cycle, meaning that the PoMs are adopted four years after the environmental status has been assessed and the next assessment takes place only 2 years after the PoMs are adopted;
- lack of clear enforceable provisions in the text of the Directive itself;
- administrative capacities and resource constraints (both financial and human);
- lack of political will;
- inconsistencies[146] between MSFD and relevant sectoral policies with conflicting interests (this is further explained in detail in the section on coherence below);
- limited considerations for the antagonistic effects of climate change on the state of the marine environment.

4.2 Efficiency

Summary findings:

The estimated costs of implementing the Directive amount to EUR 719.4 million/year and they are largely outweighed by the benefits under all scenarios. However, significant improvements in the Directive's overall efficiency can be made, notably in terms of administrative burden reduction through better coordination and data management (as highlighted in the coherence and effectiveness chapters).

The estimated overall potential benefits of achieving GES for all 11 descriptors amount to EUR 15.8 billion/year for the whole of the EU. However, given the nature of the MSFD, achieving GES requires measures to be taken under several other EU instruments, notably those regulating economic sectors and human activities most harmful to the marine environment.

So far, only a small number of the measures adopted specifically for the purpose of the MSFD has been implemented, with estimated benefits of EUR 1 billion/year, approximately.

Overall, monetising the benefits of such a wide-ranging EU instrument as the MSFD is challenging and more work is needed to make such evaluations more robust.

[146] The non-achievement of GES does not comply with the EU zero pollution action plan, which enshrines reduction targets (for 2030) of 50% for plastic litter at sea and 30% for microplastics released into the environment. Through the 'Zero Pollution Monitoring and Outlook' the Commission monitors progress towards the targets. The latest results presented in December 2022 show that the EU is not on track to achieve the 2030 targets for plastic in the oceans.

4.2.1 Introduction and methodology

The MSFD is a framework Directive with many links to other EU and international instruments. The costs and benefits identified may therefore derive from those instruments and not necessarily stem directly from the MSFD.

Efficiency has therefore been assessed using an **incremental approach**, as far as possible. The assessment first focused on the costs and benefits linked to the 'new measures' reported by the Member States under the MSFD, i.e. those measures that were prompted by the Directive's requirements alone and not mandated under relevant sectoral legislation. From that pool of measures and with a view to achieve the best possible quantification, the assessment focused on those 'new measures' that Member States have reported as being implemented to date[147].

Of all such 'new' measures reported during the first and second cycle, the calculated share of "'implemented measures'" is 6.42%[148]. This proxy figure has its limitations but allows for a more specific analysis. Subsequently, the efficiency assessment attempted to estimate the costs and benefits which would derive from fully achieving GES.

Overall, it was not possible to have a fully comprehensive cost and benefit analysis for marine protection action, as the following limitations were encountered:

- the small quantities of data provided by Member States mean that the average for the 22 marine Member States has to be extrapolated from the reported figures;
- improvements in the marine environment from measures under the Directive may take decades to show effects, thus hampering the quantification of the related socio-economic benefits;
- benefits are attributed to specific sets of measures and their synergetic effects are not measured.

A detailed overview of costs and benefits is provided in Annex IV, and the methodology, including its limitations, is explained in Annex II.

4.2.2 Assessment of costs and benefits

4.2.2.1 Costs related to the MSFD

To measure the efficiency of the implementation of the MSFD, the evaluation considered the following costs for complying with the Directive:

Table 3. Costs to comply with the MSFD

Direct compliance costs include: ▪ **administrative costs**: costs of administrative efforts required to implement key activities under the Directive, notably developing marine strategies (including the drafting of assessments, PoMs, monitoring programmes, etc.), reporting and participating in the CIS process. ▪ **adjustment costs**: investments and expenses incurred in adjusting activities to legal requirements. This includes costs related to implementing the PoMs and actions that

[147] Examples of such measures are those taken to decrease underwater noise from shipping, regulating the introduction of non-indigenous species in the marine environment or the monitoring of marine litter.

[148] This share of 6.42% is an average of the shares of new implemented measures in the 1st PoMs (25% of new measures, of which 16% were reported as implemented, i.e. 4% of all 1st PoM measures) and in the 2nd PoMs (42% of new measures, of which 21% were reported as implemented, i.e. 8.84% of all 2nd PoM measures). 6.42 is the arithmetic average of 4 and 8.84. More explanation can be found in Annex IV.

economic actors would need to take to comply with obligations. It also includes the costs of carrying out monitoring activities and collecting data on the state of the marine environment and the pressures impacting it.

Indirect compliance costs: costs related to the fact that other stakeholders have to comply with or are indirectly impacted by the legislation.

The direct compliance costs of the MSFD have been estimated to be **EUR 719.4 million a year**[149], made up by the total annual administrative costs and total adjustment costs.

The administrative costs for setting up and delivering the integrated marine management framework under the MSFD include the following items (see also Table 4):

- **administrative labour costs for delivering the marine strategies, including reporting**;
- **costs of participating in the MSFD common implementation strategy (CIS) process;**

Resulting in total administrative costs of about **EUR 92.6 million a year** (representing 13% of the total direct compliance costs).

Table 4. Annual administrative costs for setting up and delivering the MSFD[150]

Cost category	Cost estimate	What it includes	Expected costs and benefits from 2005 ex ante IA
Labour costs from MSFD administrative activities	EUR 62.9 m a year	Marine strategies (21%) Monitoring (coordination) (30%) Reporting to the public/Commission (10%) Supporting the implementation of measures (17%) Technical and socio-economic assessments (22%)	Around EUR 90 million total for the first 2 years Slightly more than EUR 7 million annually after the first 2 years
Labour costs from CIS participation	EUR 29.6 m a year	Authorities' and experts' time for participation in the CIS meetings and workshops based on # meetings, average duration and average # participants per Member State. Costs are not binding on Member States as CIS participation is technically a	These costs were not separately assessed in the 2005 assessment. They were assessed separately in 2022 because discrete data were available for that, in an effort to improve accuracy. They were also separated because

[149] As explained in Annex II and Annex IV, extrapolation methods were employed in calculating the direct compliance costs, to create EU-wide estimates (costs for 11 Member States with a coastline, and 2020 annual labor costs from Eurostat), based on data collected through surveys conducted in 2021 (replies from 9 Member States). The EU standard cost model was used to calculate the administrative costs,

[150] Time spent on administrative activities was estimated based on survey responses from a sample of 10 Member State authorities participating in the CIS process and extrapolated to EU level. Labour costs were then calculated on the basis of average labour costs (source: Eurostat, 2020, labour cost survey).

Cost category	Cost estimate	What it includes	Expected costs and benefits from 2005 ex ante IA
		voluntary activity. However, it has proven to be effective.	they are technically not binding on Member States.

Reporting to the Commission makes up 10% of the administrative labour costs (EUR 6.2 million a year). The reporting burden has often been reported as significant; however, the assessment shows that these costs are limited in *absolute* terms, despite being significant for Member States when compared to the scarce (human and financial) resources available[151], particularly in periods of budget restrictions.

Adjustment costs stemming from the PoMs were estimated at **EUR 370 million a year**[152]. This figure is based on an average total cost of PoMs across the EU of EUR 5.8 billion a year, based on information available for six Member States[153]. Starting with the total cost, an incremental approach was then applied which assumes that only 6.42% of the reported measures in the first and second PoMs are 'implemented new measures', i.e. measures that are not covered by other instruments but are taken solely for MSFD purposes, and which Member States have reported as implemented.[154]

Adjustment costs stemming from the monitoring programmes were estimated at **EUR 256.9 million a year**. These estimates were based on information published by four Member States[155]. Such costs were not envisaged in the 2005 advance impact assessment, so a point of comparison is not possible.

Beyond available estimates of costs of measures and monitoring programmes, there is no recorded evidence of possible adjustment costs for marine-based sectors, nor on their transmission to final consumers through price changes or the quality/availability of goods or services. As new regulatory obligations from the MSFD implementation are marginal, such adjustment costs are assumed to be limited.

Indirect compliance costs

[151] This is also confirmed by the outcome of the evaluation under the Fitness Check for environmental monitoring and reporting (COM(2017 312 & SWD(2017) 230), where the MSFD had been assessed as a Directive with an administrative reporting burden of up to EUR 1 million/year, in the same category as other environmental legislation with a similar scope.

[152] Estimates of adjustment costs were based on cost evidence from the updated PoMs from the second implementation cycle. Yearly incremental adjustment costs of 'implemented new measures' were estimated, under the assumption that 6.42 % of the reported measures in PoMs are 'new' measures, i.e. measures specifically designed for the MSFD, and are implemented. As mentioned before, this is an average of the shares of new implemented measures for the 1st PoMs (25% of new measures of which 16% were reported as implemented, i.e. 4% of all 1st PoM measures) and the 2nd PoMs (42% of new measures of which 21% were reported as implemented, i.e. 8.84% of all 2nd PoM measures).

[153] These costs were based on information submitted by six Member States in their 2022-2023 updated PoMs, namely Finland, Poland, Sweden, Estonia, Latvia and Lithuania. It should be noted that all these Member States are located in the Baltic region. These figures were then extrapolated per km^2 of marine area to come to a figure for the entire EU. Detailed explanation is provided in Annexes II and IV.

[154] 370 million is 6.42% of 5.8 billion.

[155] The costs are estimates and need to be interpreted cautiously for many reasons. Member States have no obligation to track or report the costs of their monitoring programmes under the MSFD. Several Member States estimate these costs on their own, and four have made annual figures public through various reports, presentations, etc. (FI, NL, IT and HR). These figures were then extrapolated per km^2 of marine area, to come to a figure for the entire EU. The total was then reduced by 37% to account for monitoring that could be attributed to other policies. The basis for this comes from the Finnish source, which states that 37% of its total marine monitoring costs could be attributed to the common fisheries policy.

The relatively few 'new' measures implemented directly for the MSFD to date have had little impact on economic actors, including in key sectors such as fisheries. The indirect costs that would result from changes in production, services or activities of sectors are assumed to be limited. However, inconsistencies between policies, and between efforts to address environmental problems at different scales (national, regional sea, EU, international; see the section on coherence), creates costs and uncertainty for business development and operation[156].

4.2.2.2 Benefits from the MSFD

Welfare benefits

The main expected direct benefits of the MSFD relate to gains in (societal) **welfare and those achieved through the blue economy,** in particular benefits derived from having clean, healthy, productive, and resilient seas (**environmental benefits**), and from improving efficiency (**efficiency gains**).

Marine and coastal waters provide a variety of benefits to society. Their **abiotic** components (e.g. seawater; oil, gas and mineral deposits) are used for energy production, as waterways for shipping, and for the provision of construction materials and minerals (e.g. sand and gravel).

At the same time, the **biotic** components of marine and coastal waters (i.e. marine ecosystems and their biodiversity) provide key benefits to people's lives and livelihoods, in particular through the direct and indirect use of **ecosystem services**. Examples of ecosystem services include climate regulation, water treatment, food and biomaterial production, leisure and recreation, and improved health and well-being (Figure 7).

In addition, non-use benefits, such as the existence value of marine biodiversity and the preservation of the marine environment for future generations, have also to be taken into account.

These uses and ecosystem services directly support the blue economy[157], in particular in the tourism, fishing and pharmaceutical sectors. Improvements in the quantity and quality of supplied ecosystem services are therefore expected to result in economic benefits and increase in general (social) welfare.

[156] Feedback provided by representatives of economic sectors during targeted stakeholder consultations carried out as part of the evaluation procedure.
[157] European Commission (2023). The EU Blue Economy Report. 2023. Publications Office of the European Union. Luxembourg.

Figure 7. Marine ecosystem services and their influence on human well-being

Source: European Marine Board, 2023[158]

For this evaluation, new calculations of the potential future environmental benefits are based on the best available data[159]. The assessment of benefits assumes that good environmental status is reached across 11 descriptors for all EU marine waters. While benefits from improving the environmental status of marine ecosystems remain limited to date, those to be expected in the future will materialise when the Directive (and underlying GES Decision) is fully implemented, namely when:

(1) all new measures for MSFD and other legislation currently proposed are fully implemented;
(2) more new measures for MSFD and other legislation are proposed in the forthcoming PoMs and are implemented; and
(3) the implemented measures deliver improvements in environmental status and enhanced ecosystem services.

[158] Grégoire, M., et al. (2023). Ocean Oxygen: the role of the Ocean in the oxygen we breathe and the threat of deoxygenation. Future Science Brief No. 10 of the European Marine Board, Ostend, Belgium. ISSN: 2593-5232.

[159] As explained in Annexes II and IV, monetary estimations of the benefits of fully achieving GES are based on Member States' valuation studies carried out between 2016 and 2021. The studies estimated the societal benefits resulting from improvements in the ecological status of marine ecosystems and the achievement of good environmental status, in relation to different descriptors. These rely on stated preference methods and value transfer to estimate willingness to pay (WTP) per household or per person. Figures have been adjusted to 2020 prices from Eurostat, and further adjusted based on purchasing power parity data (price level index from Eurostat).

The assessment is based on data and studies reported by several Member States, relying on surveys asking how much people are willing to pay for an improvement in environmental conditions (see Annex IV for more details on these studies and the methodology used).

The potential future environmental benefits deriving from the full achievement of GES are estimated to be worth **EUR 15.8 billion a year**. These calculations are based on several Member States' studies carried out between 2016 and 2021 looking at people's 'willingness to pay' (WTP) for the achievement of GES.[160] The average value that EU citizens attach to achieving GES is EUR 38 per person per year[161]. While further work is needed to make this benefits valuation more robust, this is currently the best possible approach for an EU-wide evaluation and its results are in similar order of magnitudes as other studies[162].

Next to this global estimation, a more conservative analysis tried to look at the **benefits achieved so far**, by focusing on the measures taken specifically for the MSFD that have been reported as **implemented to date**.

Based on this more conservative approach, the **incremental benefits of MSFD-only measures to date** are estimated at **EUR 1.01 billion a year**. This excludes measures that have been primarily implemented under other pieces of legislation, but which are reported by Member States as part of their marine strategies. While contributing to the protection of the marine environment, the benefits of these other measures have not been calculated as they are not part of the scope of the evaluation.

Examples of direct and indirect benefits of MSFD measures already implemented can be linked to the documented decrease in beach litter since 2016 (see Chapter 4.4 for more details).

Reducing beach litter is expected to enhance the visual appeal of coastal areas and decrease the risk of macro-litter ending up on the seabed, in the water column, or as microplastics consumed by marine animals. This reduction can lead to additional benefits, such as lower human health risks from exposure to pollutants (e.g. through eating seafood containing microplastics) and increased tourism and spending in coastal regions[163]. Furthermore, a decrease in beach litter highlights the effectiveness of proper and consistent measures to reduce plastic pollution in marine and coastal areas, potentially boosting local and national support for other waste management initiatives.

[160] The studies asked respondents to express their preferences between several scenarios presenting different states of the marine environment reflected through various attributes. These attributes reflect MSFD descriptors, for example biodiversity, eutrophication, invasive species, seen as the most problematic for the marine area that is the focus of each study.

[161] The evaluation of benefits carried out for the evaluation of the Bathing Water Directive, also based on the citizens' 'willingness to pay' for the protection provided by compliant bathing waters, found average benefits amounting to EUR 10/person/year.

[162] For example, HELCOM (2023) estimated that reaching GES in national marine waters by 2040 is estimated to be collectively worth EUR 5.6 billion a year to people around Baltic Sea. By contrast, degraded environmental conditions are estimated to cost the region's population EUR 9 billion a year in terms of forgone recreational benefits. In addition, the WFD Fitness Check referred to studies estimating that, if European bodies could achieve good status, it would bring benefits worth EUR 8 bn – EUR 11 bn.

[163] Aretoulaki, E., Ponis, S., Plakas, G., Kostantinos, A. (2021). Marine plastic littering: A review of socio-economic impacts. Journal of Sustainability Science and Management 16, pp 276-300. Article-19-16.3.pdf (umt.edu.my)

Efficiency improvements

Chapter 4.1 on effectiveness has shown that the integrated framework based on comprehensive marine strategies is largely in place. This framework delivers important efficiency improvements in the way in which groups across the EU collaborate to protect and improve the marine environment, deriving in particular from a better knowledge base, regional cooperation and consistency (in the context of the Regional Seas Conventions), and the application of the ecosystem-based approach in a number of sectors and in maritime spatial planning.

Such gains are expected to improve over time. In this sense, the relatively high costs of administrative activities to put the MSFD framework into place and to carry out monitoring activities can be seen as an investment in the future.

Quantitative evidence of these efficiency gains is, however, still limited to date.

4.2.2.3 Comparing costs and benefits

The assessment shows that, so far, compliance costs, particularly for Member State authorities, have been met in full, compared to expectations at the time the legislation was adopted. At the same time, while only some of the expected benefits have materialised, the estimated benefits attained to date and linked exclusively to measures taken specifically for the MSFD still outweigh the costs incurred on an annual basis.

While these figures must be interpreted with caution due to the many assumptions involved in their estimation, they demonstrate a reasonable level of efficiency for the MSFD overall.

Figure 8. Costs and benefits of the MSFD

In future, however, even more significant benefits are to be expected from achieving GES and related ecosystem services, which are very likely to far exceed the compliance costs (Figure 8). With much of the benefits and direct or indirect costs to economic sectors to occur in the future, it may be too early to assess whether the distribution of costs and benefits between economic sectors is fair and proportionate.

4.2.3 Polluter pays principle

The polluter pays principle is mentioned in the preamble to the MSFD, which states that PoMs should be designed by Member States on the principle that 'the polluter should pay' for environmental damage.

Costs of environmental damage are however not directly addressed in the text of the Directive itself and public consultations confirmed that the Directive has not brought about proper alignment with the polluter pays principle[164]. This means that it is Member State authorities, and hence the general taxpayers, who bear the costs instead of the polluter, which further increases administrative capacities and resource constraints[165].

This likely reflects the fact that the MSFD, as a framework Directive, does not directly regulate economic sectors and activities. However, increasing public awareness of the ecological value of clean seas, combined with more efforts made to implement new measures, may prompt a change in the allocation of costs between stakeholders and sectors.

4.2.4 Unnecessary administrative burden.

Through improvements in the governance and institutional set-up, **administrative costs could be further reduced.** As was shown above, the administrative costs amount to about EUR 92.6 million a year, representing approximately **13%** of the total direct compliance costs.

The evaluation has identified the following factors that have, in particular, limited the cost-effective implementation of the MSFD:

- coordination challenges between policies and between different administration departments;
- insufficient knowledge-sharing between authorities and insufficient knowledge use to support policy decisions;
- lack of or insufficient digitalised monitoring within or across marine regions. More efficient and innovative monitoring (e.g. rapid and automatic data collection devices, use of global observation data, including from remote sensing) could aid efficient data collection;
- cumbersome reporting at EU, regional and Member State level no longer responding to relevant policy needs;
- untapped potential for further digitalising reporting and data exchange and deriving data from satellites/space applications;
- legal and organisational barriers impacting the effective implementation of measures, while creating delays in the adoption of PoMs;
- insufficient exploitation of funding opportunities to support MSFD processes.

In general, barriers to the effective exchange of data and knowledge persist, particularly

[164] 90 % of respondents to the public consultation believe the resources invested by polluters to implement the MSFD are 'not sufficient' (the remaining 10 % did not know). Feedback from Focus Groups with Member States, RSCs, scientific institutes or networks, and NGOs corroborated those findings. Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, p152

[165] This has also been noted in the forthcoming fitness check of the polluter pays principle. The report concludes in the assessment of environmental legislation (Annex VII) that, while the Member States are responsible for assessment and monitoring of the sites, it is not clear in the MSFD who will bear the cost of compliance, and that the costs of environmental damage are not addressed in the Directive.

the lack of harmonised data collection, standardisation and visualisation.

While efforts have been made in the past to address some of these issues at EU level, e.g. through collaboration in the context of the common implementation strategy, there is potential for further reducing the administrative burden.

To this end, changes at EU level will have to be effectively implemented at Member State level, while ensuring sufficient administrative capacity. Also, at regional sea level, differences in coordination and collaboration between the RSCs are evident.

Many of the areas where efficiency improvements could be considered relate to **reporting, undertaking the technical assessments and coordination of monitoring**. Together these make up most of the administrative costs, indicating that there is potential for reducing this administrative burden.

More details are provided in Table 6 (Part II) in Annex IV (potential simplification and administrative burden reduction).

4.2.5 EU funding for implementing the MSFD

Member States have received financial support for specifically implementing the MSFD under the ***European Maritime and Fisheries Fund (EMFF)***[166], and its successor the ***European Maritime Fisheries and Aquaculture Fund (EMFAF)***[167], the ***LIFE programme***[168] and the ***research funding programmes*** such as Horizon Europe. These have provided an important contribution to the MSFD implementation.

The current ***EMFAF (2021-2027)*** aims to ensure the sustainability of maritime, fishing and aquaculture activities, while guaranteeing socio-economic benefits and food security.

The EMFAF contribution towards the MSFD objectives is indirectly covered through the commitments made to several major CFP objectives, such as those related to stopping overfishing, increasing selectivity or promoting eco-friendly innovations in aquaculture. It contributes to the Green Deal, with 28% of its amounts allocated to EMFAF shared management covering biodiversity objectives[169].

While the previous EMFF (2013-2020) earmarked 10% of its budget for the integrated maritime policy specifically dedicated to the MSFD[170], this is no longer the case in the current EMFAF programme, although the achievement of GES and the protection of marine biodiversity are still central pillars of the programme.

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[166] Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.

[167] Regulation (EU) 2021/1139 of the European Parliament and of the Council establishing the European Maritime, Fisheries and Aquaculture Fund.

[168] regulation (EU) 2021/783 of the European Parliament and of the Council of 29 April 2021 establishing a Programme for the Environment and Climate Action (LIFE)

[169] https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/horizontal-priorities/green-budgeting/biodiversity-mainstreaming_en#:~:text=As%20from%20the%20draft%20budget,of%20each%20type%20of%20interventions

[170] A number of EMFF-funded MSFD-specific projects, such as QuietSeas, HELCOM BLUES, NEA PANACEA, ABIOMMED or CetAMBICion, made substantial contributions to the implementation of the MSFD across Europe, notably the definition of GES and threshold values, the development of monitoring approaches and the design of MSFD-specific measures.

According to the 2021 EMFF Implementation report[171], nearly 37% of all EMFF support (EUR 1.5 billion) contributed to preserving and protecting the environment. The funded activities include measures supporting the Natura 2000 network, the design of fisheries techniques to limit marine degradation, the collection of lost fishing gears[172], the collection of scientific data and the progressive reduction of unwanted catches.

All such measures contribute to the achievement of good environmental status, even if they were not labelled as being directly used to implement the MSFD[173].

The ex-post review of the EMFF and mid-term review of the EMFAF should provide further detail on their contribution to of MSFD-related projects.[174]

The ***LIFE programme*** is the only EU funding instrument dedicated exclusively to the environment, nature conservation and climate action. Created in 1992, the LIFE programme has cofinanced thousands of projects contributing to the implementation, updating and development of EU environmental policy and legislation. Since 2008, LIFE has financed 134 projects on marine protection, directly or indirectly supporting the implementation of the MSFD[175]. In total, an EU investment of €421million was mobilised for these projects. Under the current MFF, the LIFE programme[176] 2021 – 2027 is endowed with a budget of €5.432 billion. The contribution to the marine environment includes the management, conservation, restoration and monitoring of biodiversity and marine ecosystems and the protection of species, in particular in Natura 2000 marine sites.

The MSFD implementation is supported directly under the Circular Economy and Quality of Life sub-programme in connection to underwater noise, marine litter and/or contaminants, disturbance of and damage to the sea floor, reduction of impacts of deep-sea exploitation and exploration, over-fishing and/or incidental by-catch, nutrient and organic matter inputs from agriculture or aquaculture and/or navigation. Support to the biodiversity MSFD descriptors is provided mostly under the Nature and Biodiversity sub-programme in synergy with the implementation of the EU Nature legislation and policy. Support to Member States in the implementation of the MSFD is also provided through the strategic integrated projects that aim to mobilise actions and create synergies with other sources of funding, including national funds.

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[171] European Commission, Directorate-General for Maritime Affairs and Fisheries, Vesers, R & Sanopoulus, A., 2021, *FAME Support Unit, EMFF implementation report,* Brussels, https://ec.europa.eu/oceans-and-fisheries/document/download/68276db8-058c-4766-8368-34681e09993b_en?filename=emff-implementation-report-2020_en.pdf

[172] Data for 2014-2020 demonstrate that eight coastal Member States have contributed to the collection of lost fishing gear; EUR 23 million allocated from EMFF; EUR 19 million of EMFF funding spent by Member States (84% from allocated); 535 operations. See EMFF implementation report 2022, https://oceans-and-fisheries.ec.europa.eu/document/download/5a89eca0-16ea-4259-a452-d03eef74ffcb_en?filename=EMFF-implementation-report-2022_en.pdf

[173] However, the European Court of Auditors in its special report (2020) on the protection of the marine environment estimated that, by the end of 2019, 'the four Member States visited had used about 6% of their total EMFF funding for the conservation measures most directly linked to the MSFD and the BHDs, and a further 8% on measures with a less direct impact on conservation'.

[174] Respondents to the targeted survey (question 5.9) suggested that the Directive would have been more cost effective if the EMFF was better applied to cover MSFD measures, with available funding directed towards implementation and bridging the lack of national data; see: Synopsis report (Annex V).

[175] For a detailed overview until 2018, see: European Commission: Directorate-General for Environment, Nottingham, S., Eldridge, J., Travagnin, C., Camarsa, G. et al., LIFE and the marine environment, Publications Office, 2018, https://data.europa.eu/doi/10.2779/942085

[176] Regulation (EU) 2021/783 of the European Parliament and of the Council of 29 April 2021 establishing a programme for the Environment and Climate Action (LIFE)

The ***Research & Innovation funding programmes*** have also strongly contributed with new modelling, observations and predictions to the advancement of the state of science, development of novel methodologies and standards, collection of new data and overall the advancement of evidence-base supporting the implementation of the MSFD. Under Horizon Europe, the new Mission "Restore our Ocean and Waters by 2030"[177] aims to protect and restore the health of our ocean and waters through research and innovation, citizen engagement and by bringing concrete solutions to the challenges faced by our seas and ocean today.

In addition, other EU funds are used to help implement measures to achieve the MSFD objectives, such as the European Regional Development Fund, the cohesion fund, the Recovery and Resilience Facility, InvestEU, the European agricultural fund for rural development and indirectly the innovation fund.

According to certain members of national administrations, access to EU funds for MSFD implementation remained generally challenging for Member States, due to their administrative complexity and tight time schedules for submitting proposals and managing projects[178].

4.3 Coherence

Summary findings:

The Directive is partially coherent with relevant EU, regional and international law and policy.

Although the MSFD has been overall coherent with relevant environmental legislation, in particular the Water Framework Directive and the Habitats Directive, there are still gaps and overlaps. This concerns the Directive's geographic scope, consistency of assessments, implementation/reporting cycles and measures.

Despite the development of strong links between the MSFD and other relevant legislation, especially in the maritime domain, there is still insufficient integration of the MSFD principles and objectives, in particular the achievement of GES and the application of the ecosystem-based approach in sector-specific legislation.

There is often a lack of clarity on the division of responsibilities and inefficient governance in terms of ensuring that marine environment protection interests are fully safeguarded. Clear guidance is missing for national authorities on how to streamline relevant processes between the frameworks, such as the sharing of data or the design of common measures. Finally, the impacts of climate change have not been fully integrated and accounted for in the MSFD.

As a framework Directive, the MSFD aims to '*contribute to coherence between, and to ensure integration of environmental concerns into, the different policies, agreements and legislative measures which have an impact on the marine environment*' (Article 1(4)). Most measures (53%) included in the recently updated MSFD programmes of measures stem from other legal frameworks, highlighting the need to streamline and coordinate with other policies to achieve MSFD objectives, both at national and EU level.

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[177] https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/restore-our-ocean-and-waters_en

[178] In Member State Focus Group discussions as well as from interviews carried out for Loudin et al., 2021, *Financing the implementation of the EU MSFD: Issues and options*, Report for the European Commission, p50 and quoted in Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, p150.

First and foremost, the MSFD forms part of a complex framework of **environmental legislation** that relates to the protection and management of the marine environment. As such, the implementation of the MSFD is nowadays also guided by the **European Green Deal (EGD, 2019)**, the **Zero Pollution Action Plan (ZPAP, 2021)** and the **Biodiversity Strategy (BDS, 2020)**.

These strategies have brought a renewed commitment for clean, healthy and productive seas, by addressing the main pressures on marine ecosystems (EGD), setting reduction targets for key pollution sources (ZPAP), strengthening networks of protected areas and introducing protection and restoration targets (BDS). In doing so, they have placed the objective of GES for EU seas squarely in the list of necessary achievements for a green and climate-neutral Europe.

Marine environmental policy, particularly the achievement of GES, also interacts with **wider EU sectorial policies**, such as fisheries, agriculture, maritime spatial planning, energy, and transport.

This chapter will assess the coherence of the MSFD with these different EU/international legislative instruments and policies. A full description of the relevant legislation is provided in Annex VIII.

4.3.1 Coherence with EU environmental legislation

4.3.1.1 Water and nature protection: Water Framework Directive and the Nature Directives (Habitats Directive and the Nature Restoration Regulation)

Interactions with the Water Framework Directive (WFD) and Habitats Directive (HD)

The three Directives (MSFD, WFD and HD) aim to achieve a desired state of the environment and/or of specific environmental components, unlike other environmental legislation, which regulates either specific pressures or sectors.

This means that the three Directives require an **assessment of status:**

- 'good environmental status' for the MSFD;
- 'good ecological/chemical status' for the WFD;
- 'favourable conservation status' for the HD.

By design, the MSFD aims to be **coherent** with the existing WFD and HD frameworks.

This approach is apparent from the Directive itself:

- it is supposed to contribute to consistency between policies which have an impact on the marine environment (Article 1(4));
- it applies to coastal waters, as defined by the WFD, only to the extent that particular aspects of environmental status are not already covered by the WFD (Article 3(1)b);
- when designing their PoMs, Member States are required to take into account relevant measures required under EU water policy (WFD, Urban Wastewater Treatment Directive, Bathing Water Directive, Environmental Quality Standards for Priority Substances Directive), as well as the spatial protection measures under the Habitats and Birds Directives.

Coherence with other environmental policies was further strengthened with the adoption of the 2017 GES Decision, which specifies that, for elements covered by other relevant EU

legislation, the methodological standards (including e.g. threshold values) to be used for the assessments should be those prescribed in the respective legislation[179], as clearly referred to in the Annex to the Decision per descriptor criteria.

At the same time, the MSFD is meant to be **complementary** to the WFD and HD frameworks, since it covers the entirety of the marine waters and is based on more extensive knowledge about what should be considered a 'desirable state' of the marine environment, based on additional parameters to be considered[180].

In practice, it is recommended that Member States re-use the results from the WFD and the HD assessments. However, these can lead to inconsistencies in overall status assessments, due to methodological, time, spatial or technical differences in the definition and/or use of the individual criteria[181] structuring the assessments of status[182].

These different, and sometimes contradictory, results are due to the way that the overall objectives/concepts of the MSFD (*good environmental status*), WFD (*good ecological status, good chemical status'* and *good quantitative status*) and HD (*favourable conservation status*) are defined and structured. This results in **different aggregation methods** for concluding and reporting on the overall assessment of status.

The inconsistencies can also be the result of weak coordination between the authorities responsible for the implementation of the different Directives at national and regional level, or because of differences in approach and failure to use the flexibility laid down in the legislation. For example, methodological choices made by the experts involved in preparing regional assessments under the MSFD may differ from those made by national experts in charge of implementing the WFD and HD.

(1) Managing pressures

Measures adopted by Member States to fulfil the WFD[183] and HD objectives are an essential component of the measures needed to achieve GES under the MSFD. This is

[179] In these cases, the assessment of individual elements can either be done under the MSFD, following the methodological standards defined under the relevant legal instruments, or by re-using the results from those assessments.

[180] For instance, assessing GES under descriptor 1 (biodiversity) for a species covered by the HD (such as the bottlenose dolphin) requires the assessment of a number of HD standards (e.g. in relation to distributional range), but also the assessment of mortality through incidental bycatch, which is not strictly required in the assessments under the HD.

[181] These are called *criteria* in the MSFD, *criteria* or *parameters* in the HD, and *biological quality elements*, BQEs or *environmental quality standards* in the WFD.

[182] For an in-depth review of the methodological differences in the assessments under the MSFD and BHD, see the study *Coordinated assessments of marine species and habitats under the Birds and Habitats Directives and the Marine Strategy Framework Directive Process and Technical Review: Main Report (Final*, European Union, 2021. For a more detailed analysis of methodological differences in the assessments under MSFD and WFD, see Salas Herrero, M.F., et al., *Physico-chemical supporting elements in coastal waters: Links between Water and Marine Framework Directives and Regional Sea Conventions*, EUR 30383 EN, Publications Office of the European Union, Luxembourg, 2020; and see Synthesis report from the Workshop on Exploring Synergies between the WFD and MSFD implementation – 20 & 21 April 2023, available at: https://circabc.europa.eu/ui/group/326ae5ac-0419-4167-83ca-e3c210534a69/library/9a85d568-6348-4e15-a7d2-de47536ca5bd/details

[183] These include also measures taken for the UWWT Directive or the Nitrates Directive, which are basic measures under the WFD.

reflected in the Member States' PoMs, which systematically refer to 'existing measures' under other frameworks[184].

To avoid double reporting by Member States, efforts have been made over the years to strengthen the links between the reporting of the MSFD PoMs and the concurrent reporting of measures taken under the WFD River Basin Management Plans.

Member States are also encouraged to consider the measures taken under the HD, which will contribute to achieving GES[185].

In their updated programmes of measures, reported in 2022, Member States have included in their PoMs a number of measures stemming from other frameworks. The WFD and the HD are the EU laws most frequently mentioned in the updated PoMs, thereby confirming the high relevance of these two legal frameworks, and the measures stemming from them, for the implementation of the MSFD[186].

In its latest assessment of the state of water, the EEA noted that surface waters, such as lakes, rivers and coastal waters, are still in a highly critical situation. According to the latest data reported by 19 Member States for the WFD, less than half of EU surface waters (37%) were in good or high ecological status in 2021, and less than a third (29%) in good chemical status[187]. Similarly, only 6.5% of assessments of conservation status are favourable for coastal habitats protected by the Habitats Directive for the period 2013-2018 (latest data available)[188].

The full implementation of these two pieces of legislation would therefore substantially contribute to better managing certain pressures on the marine environment and ultimately to the achievement of GES for several Descriptors.

The objective of achieving GES, however, requires the adoption of **additional measures specific to the MSFD**, to:

- cover the entire MSFD geographical scope (e.g. protecting seabed habitats in the entire marine waters and not only inside Natura 2000 areas, measures to reduce chemical contamination in offshore areas);
- cover emerging types of pressures not covered by the WFD or HD (such as marine litter, energy inputs and underwater noise);
- address more integrated functions of the marine ecosystems (such as food webs or seafloor integrity).

[184] In addition to measures taken directly under the WFD, measures taken by Member States to implement the Nitrates Directive, the Bathing Water Directive and the Urban Wastewater Treatment Directive (UWWTD) also contribute to reducing pollution levels from industry, agriculture and urban areas. The recent review of the UWWTD in particular is expected to result in further reductions in contaminants, notably micro-pollutants. The obligation to take into account measures adopted under relevant EU legislation is laid down in Article 13(2) MSFD in relation to EU water policy and Article 13(4) MSFD in relation to the Habitats and Birds Directives' spatial protection measures.

[185] This work has been done by the European Environment Agency in the context of ReportNet and agreed to by Member States in the context of the DIKE working group under the CIS.

[186] Commission Staff Working Document accompanying the document Report on the *Commission's assessment of the Member States' programmes of measures as updated under Article 17 of the Marine Strategy Framework Directive (2008/56/EC)*, SWD(2024) 681

[187] Europe's state of water 2024 The need for improved water resilience, EEA Report 07/2024, available at: https://www.eea.europa.eu/en/analysis/publications/europes-state-of-water-2024

[188] Workbook: SON Conservation status and trend.

Under Article 1(4) and Articles 13(2) and (4) of the MSFD, such measures should not conflict with existing measures taken under the WFD and HD and should even contribute to meeting the objectives of these legislative instruments.

For instance, protecting vulnerable species and habitats under the Habitats Directive also benefit from broad measures related to marine litter, pelagic habitats or food webs. Similarly, the ecological status of coastal water bodies benefits from additional measures protecting seafloor integrity and marine fish species or against non-indigenous species.

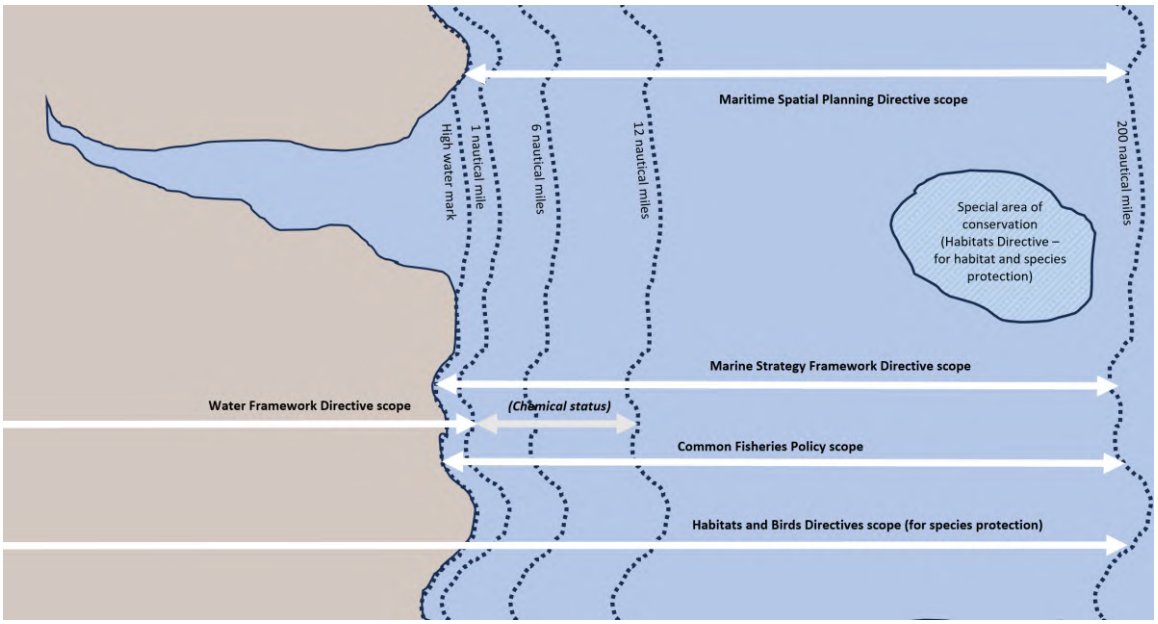
(2) Geographical scope

The MSFD's geographical scope, as defined in Article 3, covers areas which also fall under the scope of the WFD and the HD. This is not an issue as such, except when the applicable requirements under the different pieces of legislation are not fully aligned or where requirements partially overlap.

As explained above, the requirement to achieve GES under the MSFD is not fully met by simply fulfilling the requirements imposed by the WFD and HD. Therefore, in the areas where these pieces of legislation overlap geographically, **additional action** will be required under the MSFD to monitor, collect data, assess and take the relevant measures to address the additional elements.

In practice, where the MSFD overlaps geographically with the WFD or HD, for instance within the 1nm/12nm zone or inside Natura 2000 areas, this often dilutes the responsibilities for addressing the MSFD-specific topics[189].

Figure 9. Geographical scope of, and overlaps between, EU water-, nature- and marine-related legislation



It should also be noted that the geographical scope of the WFD covers the full territory of EU Member States, including its outermost regions, whereas a number of overseas countries and territories are specifically excluded from the scope of the MSFD, such as the French Overseas Departments and Collectivities (Article 3(1)(a)). The Habitats Directive

[189] As pointed out by respondents to the targeted stakeholder consultation, see Synopsis Report, Annex V.

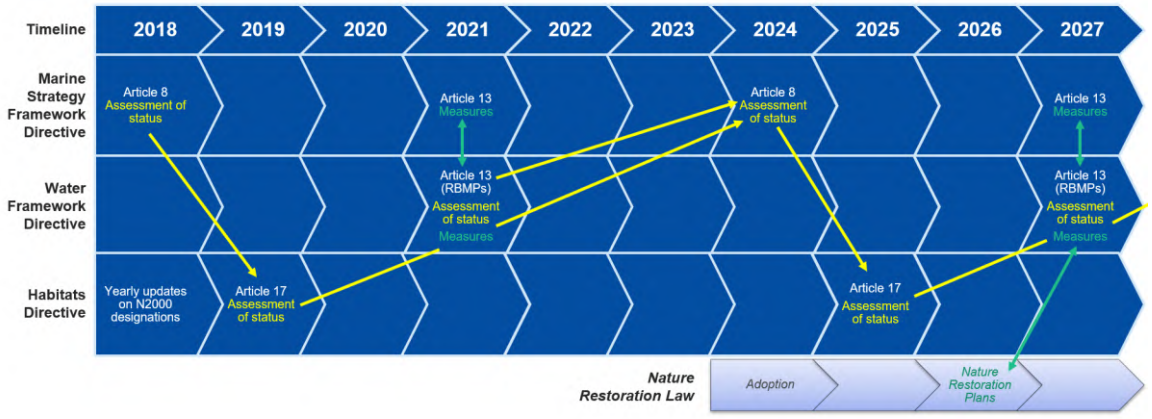
applies to the European territory of the Member States to which the Treaty applies, which means that overseas countries and territories are also excluded.

(3) Implementation cycles

The misalignment in the timing of the implementation cycles for the MSFD, WFD and HD is often considered to be a significant obstacle to the smooth functioning of these Directives[190]. It is particularly challenging for those implementing the MSFD, as this Directive is dependent on the processes under the WFD and HD, notably the collection of data, up-to-date assessment of status and adoption of measures.

The following graph illustrates some of the interactions in the implementation cycles of the MSFD, WFD and HD.

Figure 10. Implementation cycles of MSFD, WFD and HD (2018-2027)



For the MSFD and the WFD, the reporting of **measures** is well aligned and supports the integration of measures developed for the River Basin Management Plans (RBMPs) into the MSFD programmes of measures (PoMs). However, delays in establishing the RBMPs may lead to delays in submitting MSFD PoMs.

When it comes to the **assessment of status**, the timing differs by **3 years**, as illustrated in the figure above. This means that the results of the assessment of ecological and chemical status under the WFD are already a few years old by the time they can be reused by Member States to assess environmental status under the MSFD.

Also, it should be kept in mind that the RBMPs, reported every 6 years, combine the assessment of status and measures, which for the MSFD are divided into different points within the 6-year cycle.

With respect to the HD, the differences in timing are even more striking, and have been reported by Member States as an obstacle to coherence between the two Directives[191].

Although, in principle, the **assessment of conservation status** under Article 17 of the HD should come 1 year after the assessment of environmental status under Article 8 of the MSFD, in many cases Member States' experts apply a different order. They first assess the conservation status of the habitats and species protected under the HD, and subsequently build on these results when assessing the species' environmental status under the MSFD

[190] See results from focus group discussions in the contractor's supporting study, section 4.4.1.1 (Stakeholder perspectives) and Franco, A. et al., 2021, as before, as well as the synthesis report from the Workshop on Exploring Synergies between the WFD and MSFD implementation.
[191] Franco, A. et al., 2021, as before

(adding relevant criteria and parameters, where necessary).

In this way, Member State experts re-use the assessment results produced for the HD **5 years earlier** for the MSFD, rendering the assessment of environmental status for these species and habitats almost immediately out of date.

In addition to an in-depth analysis of the WFD and HD, the evaluation also considered **other water and nature legislation**[192] (see Annex VIII). These instruments are highly relevant to the MSFD, in particular for achieving GES for descriptors D1 (biodiversity), D5 (eutrophication), and D8 (contaminants); however, no major inconsistencies or issues of coherence were found. When designing their PoMs under Article 13(2) MSFD, Member States are required to take into account 'relevant measures under EU water legislation, in particular: the Water Framework Directive, the Urban Wastewater Treatment Directive, the Bathing Water Directive, and environmental quality standards in the field of water policy'.

Interactions with the Nature Restoration Regulation

The recently adopted ***Nature Restoration Regulation*** (NRR)[193] establishes a framework where Member States must restore at least 20% of sea areas by 2030, and all ecosystems in need of restoration by 2050. Restoration is also explicitly included in the objectives of the MSFD whereby the marine strategies must *'protect and preserve the marine environment, prevent its deterioration or, where practicable, restore marine ecosystems in areas where they have been adversely affected*' (MSFD, Art 1(2)(a)).

Article 5 of the NRR on marine ecosystems requires Member States to put in place restoration *measures* to improve to *good condition* the *habitat types listed in Annex II of the NRL* that are not in good condition, to achieve *specific restoration targets* by *certain deadlines*[194].

The following section will look at coherence between the MSFD and the NRR, in terms of restoration targets and timetable for the NRR:

Scope:

For the marine environment, the NRR focuses on the restoration of the seabed habitats listed in Annex II, which are divided into seven groups. Groups 1 to 6 cover habitats of high ecological value, such as seagrasses, maerl beds, reefs and macroalgal forests.

Group 7 consists of large soft sediment types of habitats, such as sandy and muddy habitats, down to a maximum depth of 1000m and is much larger in its extent than the group 1-6 habitats. The group 7 habitats mirror the MSFD broad benthic habitat types defined in the 2017 GES Decision, with the exception of habitats below 1000m depth, which are covered

[192] In particular: the Bathing Water Directive, the Urban Wastewater Treatment Directive, the Environmental Quality Standards Directive, the Priority Substances Directive, and the Birds Directive. See the analysis in Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, p. 182 and further, as well as Annex VIII.

[193] Regulation (EU) 2024/1991 on nature restoration (OJ L, 2024/1991, 29.07.2024)

[194] Namely, the NRR in its Article 5 requires that Member States take restoration measures to ensure that areas of the seabed habitats included in Annex II (groups 1 to 7) that are not in good condition improve to good condition according to the following timetable and steps:

- By 2030 – at least 30% of total area of all groups 1 to 6
- By 2040 – at least 60% of each group from 1 to 6, 2/3 of a percentage so as not to prevent good environmental status (MSFD) for group 7
- By 2050 – at least 90% of each group from 1 to 6, a percentage so as not to prevent good environmental status (MSFD) for group 7

by the MSFD and not by NRR[195].

The NRR also lists in its Annex III the species for which habitat restoration is needed. These species – and their habitats – are also covered under the MSFD, which covers an even broader array of marine species.

The MSFD geographical scope, which is the entirety of European marine waters, is therefore wider than the NRR. However, in certain marine regions, such as the North Sea or the Baltic Sea, there is a very large degree of overlap.

It should be noted that, like the MSFD, the NRR's geographical scope of application covers only ecosystems in the European territory of EU Member States to which the Treaties apply. This means that, for example, the French countries and territories are not in the scope of the NRR.

Objective and targets:

The main objective of the NRR is to put in place restoration measures to bring back to good condition habitats that are not currently in good condition and to increase the extent of habitats in good condition in the marine environment, according to the targets set out in Article 5. Under the MSFD, the objective closest to that of the NRR is GES Descriptor 6 which requires that '*sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected*'. In 2022, EU experts agreed that, to be in GES, at least 75% of seabed habitat types should be in good condition (i.e. not be adversely affected by human pressures)[196].

A key difference between the MSFD and the NRR is that the NRR sets incremental deadlines up to 2050, whereas achieving GES under the MSFD was set for 2020. Moreover, achieving GES is the core objective of the MSFD (outcome-based obligation), whereas the NRR focuses on the efforts needed to achieve a certain conservation outcome (effort-based obligations). There are however synergies, reinforced by clear references to the MSFD in the NRR text.

For NRR group 7 habitats, the logic of the two laws is aligned by design, i.e. the objective of the NRR is to restore the listed seabed habitats to 'good condition' over a certain extent, which should *'not prevent good environmental status'* (NRR Article 5(1)(d)), meaning that the condition and extent of group 7 habitats should at least comply with the relevant GES threshold values for descriptor 6 (as described above).

For groups 1-6, the NRR targets are of higher ambition than those set through the MSFD threshold values. This is, however, in line with the 2017 GES Decision which envisages the possibility to have a more protective regime for 'other habitat types', which Member States have the flexibility to define.

Measures and cycle:

The national restoration plans under the NRR should be submitted by mid-2026 for the period up to 2032, reviewed and revised by June 2032 and every 10 years thereafter. This is not fully aligned with the MSFD cycle, in particular the updates to the PoMs, which are to be reported in 2027 and 2033 (Figure 10).

Restoration in the marine environment is likely to be first 'passive restoration', as 'active

[195] There are exceptions to this since some habitats in groups 1-6 in NRR may be found in waters below 1000m depth.

[196] EU Green Week: first ever EU-wide criteria for seabed protection - European Commission

restoration' can be more costly. Passive restoration means removing pressures and letting the marine ecosystems recover by themselves. This is in line with the rationale of the MSFD, which aims among others to reduce pressures on marine ecosystems (MSFD Art 1(2)).

This means that the measures to restore habitats under the NRR are likely to be similar to – or coherent with – the measures needed to achieve GES, in particular for the restoration of group 7 habitats. For the other groups of habitats that may be more vulnerable to specific pressures, additional measures are likely to be needed under NRR for their restoration. MSFD strategies are explicitly referred to in NRR Article 14(14) for the preparation of the national restoration plans[197].

Article 14(17) and (18) also require Member States to coordinate with their neighbours, and, where practical, make use of '*existing regional institutional cooperation structures'*. This is an indirect reference to regional sea conventions (RSCs), further strengthened by the reference to the RSCs in recital 44.

In Article 14(19), the NRR also mirrors and strengthens MSFD Article 15 by requiring that Member States call on other Member States, the Commission or international organisations to address issues preventing the restoration of marine ecosystems which require measures which are not in their remit.

The NRR also introduces, in Article 15(4) and Article 18, a requirement for Member States to make use of the tools of the CFP, for the purpose of their national restoration plans where applicable, including the regionalisation process set out in Article 18 of the CFP Regulation (see Section 4.3.2) regarding the adoption of fisheries management measures contributing to the protection of marine ecosystems, and sets a deadline for the timely consultation and submission of joint recommendations on the necessary measures of a minimum of 18 months before the deadline for the targets set out in Article 5. This should render the Article 11 CFP procedure more effective than it has been so far in relation to MSFD and Habitats Directive.

4.3.1.2 Other environmental legislation

The ***Environmental Impact Assessment (EIA) Directive*** and ***Strategic Environmental Assessment (SEA) Directive***[198] aim to integrate environmental standards and limits into projects, plans and programmes, and they mention impacts to water, fauna and flora among the impacts to be considered. The assessments required under these Directives are relevant for all MSFD descriptors and pressures on the marine environment, and may be useful for assessing progress towards achieving GES[199].

They assess the impacts of human activities on the marine environment and give environmental authorities the knowledge and information necessary to require specific mitigation measures to be put in place by promoters of projects that pose threats to the marine environment.

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[197] '*When preparing their national restoration plans, Member States shall take into account in particular the following: […] (d) where applicable, marine strategies for achieving good environmental status for all Union marine regions prepared in accordance with Directive 2008/56/EC*' (NRL Art 14(14))

[198] Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment and Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

[199] European Commission, COM(2020) 259 final.

The SEA Directive can promote the use of an ecosystem-based approach, both in the context of the MSP Directive and the MSFD[200], mobilising relevant stakeholders to ensure that the ecosystem components, interactions and the MSFD threshold values are duly considered, before deciding where certain activities can take place.

While the SEA Directive does not directly refer to the ecosystem-based approach, this approach is highlighted in guidance documents on the integration of climate change and biodiversity[201] that are relevant in the context of SEAs prepared for maritime spatial plans which are interlinked with the provisions of the MSFD.

Despite the clear links with the EIA and SEA Directives, the MSFD does not refer to environmental assessments for projects in relation to planned (human) activities in the marine environment. Nor does the MSFD contain any particular provision relating to licensing and permitting of human activities, unlike the WFD and HD. This is one of the factors that makes it hard to take the ecological boundaries defined by the MSFD fully into account when planning human activities at sea. Ultimately it prevents the ecosystem-based approach (EBA) from being fully applied.

Thus there is scope for better integration between the Directives, also taking into consideration the Maritime Spatial Planning Directive (see Section 4.3.2). In addition, the data-sharing requirements of the MSFD could offer significant input to the EIA and SEA procedures. More specifically, a comprehensive data-sharing system set up for the MSFD would reduce data collection efforts for these assessments and ensure they are well suited to the marine environment and built on appropriate baselines[202].

Similarly, the MSFD requires measures to be coherence with the ***Infrastructure for Spatial Information in the European Community Directive*** (2007/2/EC, INSPIRE Directive)[203], which sets up an EU infrastructure for spatial information, to facilitate sharing of data related to the environment. It lays down rules for improving interoperability and the exchange of environmental data.

Article 19(3) of the MSFD requires Member States to provide access and use rights in respect of data and information resulting from the assessment of marine waters, and specifically refers to the INSPIRE Directive. MSFD reporting has been slow and access to primary data, rather than assessment results, has been limited, making it difficult to assess compliance with the INSPIRE Directive.

The recent revision of the ***Waste Framework Directive***[204] added direct references to the MSFD and marine litter. The adoption of the ***EU Strategy for Plastics***[205] and the implementation of the ***Single-Use Plastics (SUP) Directive***[206] will go further in tackling

[200] European Commission, *Guidelines for implementing an ecosystem-based approach in maritime spatial planning,* as above.
[201] Altvater, S., Lukić, I., & Eilers, S., 2019, *EBA in MSP – a SEA Inclusive Handbook*, https://maritime-spatial-planning.ec.europa.eu/practices/eba-msp-sea-inclusive-handbook
[202] European Commission, DG Environment, McGuinn, J., et al., 2019, Study to support the REFIT evaluation of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive): final report, Publications Office of the European Union, Luxemburg.
[203] Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).
[204] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Text with EEA relevance).
[205] European Commission, COM(2018) 28 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A European Strategy for Plastics in a Circular Economy.
[206] Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment, PE/11/2019/REV/1 (OJ L 155, 12.6.2019).

marine (plastic) pollution, in future will also cover microplastics and unintentional release of plastics. The effective and full implementation of EU waste legislation remains fundamental for the success of the MSFD.

4.3.2 Coherence with maritime legislation and blue economy policies

Launched in 2007, the ***integrated maritime policy (IMP)*** aimed to develop coordinated, coherent and transparent decision-making in relation to the EU's sectoral policies affecting the ocean, seas, islands, coastal and outermost regions and maritime sectors. It called on Member States to achieve the objective of good environmental status as set out in the MSFD (at the proposal stage at the time).

As such, the MSFD was intended to provide the **environmental pillar** of the IMP. All maritime policies under the IMP explicitly state that the **preservation of the environment and the sustainable management of marine resources** is essential to ensure a viable blue economy for the decades ahead.

More recently, the ***2021 EU Communication on a Sustainable Blue Economy*** aims to integrate European ocean policy into European economic policy to achieve the objectives set out in the EGD. It states that full implementation of the MSFD is essential to reduce the adverse effect of human activities on marine ecosystems.

In theory, the objective of sustainable development should not prevent the achievement of the MSFD's overall objective of GES. However, ambiguous interpretation of what sustainability entails in a particular sector threatens policy coherence and creates obstacles for achieving good environmental status for EU seas[207].

The following sections look in more detail at the EU legislative instruments regulating the blue economy and their interplay/coherence with the MSFD.

4.3.2.1 Maritime spatial planning

The ***Maritime Spatial Planning Directive*** (MSPD) requires the application of an ecosystem-based approach (EBA), as defined in the MSFD, to promote the sustainable growth of maritime economies, the sustainable development of marine areas and the sustainable use of marine resources[208].

By referring to the MSFD definition of the EBA, the MSPD creates a link to the MSFD objective of achieving GES in the context of planning and promoting the sustainable development of the maritime area[209].

While the capacity of MSFD national authorities to put into practice the EBA can be limited, since the MSFD does not directly regulate economic activities, in theory MSP authorities have the capacity to make this approach a reality through the planning of human activities at sea.

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[207] Regulation (EU) 2020/852, also known as the 'Taxonomy Regulation', may provide useful guidance in this respect, as it creates a classification system to identify whether given economic activity should be considered 'environmentally sustainable' and includes a reference to the need to respect objectives and standards under the MSFD.

[208] Recital 14 of the Marine Spatial Planning Directive

[209] The 2021 Commission Guidelines for implementing an ecosystem-based approach in maritime spatial planning' specify that the achievement of GES is one of the core components of the EBA in maritime spatial planning (section 3.1.1). The Guidelines also recognize that Member States' first maritime spatial plans can reflect different degrees of sustainability, but that a stronger level of sustainability implies that environmental goals should take precedence, followed by the social and economic goals.

The Commission will deliver a report on the implementation of the MSPD in 2026, which should provide further insights on if and how Member States applied an ecosystem-based approach. Informal assessments of the plans so far reported have shown that the implementation of the EBA under the MSPD seems to remain confined to biodiversity conservation measures, such as the designation of MPAs[210]. While these are important tools, they are not in themselves sufficient to achieve good environmental status for the seas and do not deliver on a comprehensive application of the EBA.

A limited integration of the GES objective into maritime spatial plans can create uncertainty for economic operators, as the legal obligation for the national authorities to secure its achievement may impact their activities at some point in time. At the same time, the absence so far of a full set of MSFD threshold values in the GES determinations per descriptor (see Section 4.1.1) hinders the overall implementation of the EBA, including in the MSP context.

The planned development of offshore energy production and the ongoing need to ensure food and critical raw material security are expected to have significant impacts on marine ecosystems. For this reason – and in view of the 2030 biodiversity targets – the links between the MSFD and the MSPD are fundamental.

The two Directives must work hand-in-hand, together with the EIA and SEA Directives, to ensure that the spatial planning and licensing of maritime activities follow an integrated, regional and ecosystem-based approach, while ensuring the cumulative impacts of blue economy activities do not hamper the achievement of good environmental status for marine waters.

Based on good practice, examples of possible integration between MSFD and MSP include[211]:

- giving a single government body the lead for both Directives and assigning the coordination of the implementation of both Directives to a single department;
- coordinating the MSP cycle with the MSFD cycle, to strengthen links between data availability and measures;
- facilitating the use of MSFD knowledge in MSP, supporting the development of common marine/maritime knowledge systems and databases that are fed by knowledge-increasing efforts carried out under each Directive, to support their implementation.

4.3.2.2 Fisheries and aquaculture

The ***CFP***[212] is an area of exclusive competence of the EU, which aims to ensure that fishing and aquaculture activities are **environmentally sustainable** in the long term (Article 2(1)). It requires the implementation of an EBA to fisheries management, to ensure that negative impacts of fishing activities on the marine ecosystem are minimised (Article 2(3)). It provides a framework for the implementation of measures for the conservation of fisheries resources contributing to achieving the objectives of environmental legislation.

At the same time, the CFP places **economic, environmental and social objectives at par**, with a view to maintaining a competitive fishing and processing industry (Article 2(5)(d)).

[210] https://www.wwf.eu/?7932966/The-EU-is-not-on-track-for-a-sustainable-blue-future

[211] See Commission Guidelines for implementing the ecosystem-based approach in maritime spatial planning, section 3.1.2, p. 24.

[212] Regulation (EU) No 1380/2013 of 11 December 2013 on the Common Fisheries Policy (CFP).

For fish stock management, the 2013 reform of the CFP embedded the concept of 'maximum sustainable yield' in the legislation, thereby ensuring continued progress in the conservation of the commercial fish stocks and contributing to delivering on GES.

Although the CFP does not define the EBA in the same way as the MSFD, the reference to '*ecologically meaningful boundaries*' in the CFP definition (Article 4(1)9) [213] suggests that the approach should be consistent with the objectives of the MSFD. More specifically, CFP standards are referred to in the 2017 GES Decision for determining GES for descriptor 3 (commercial fish and shellfish see Section 4.1.1.5).

In addition, the ***Technical Measures[214], Data Collection[215] and Control[216] Regulations*** seek to contribute to a more sustainable fishing sector. In particular, the Technical Measures Regulation contributes to reducing the impact of fisheries on the marine environment.

Since the adoption of this Regulation in August 2019, further delegated acts have been adopted to improve the **selectivity** (i.e. the capacity of fishing gears to catch only certain parts of a fish population) in EU fisheries and protect sensitive species[217]. This is directly relevant for MSFD descriptor D3 and for other MSFD descriptors impacted by fisheries, in particular D1 (species), D4 (food webs) and D6 (seafloor integrity).

At the same time, when asked about coherence between the MSFD and sectoral EU policies, 51% of respondents to the public consultation indicated that there are gaps or inconsistencies between the MSFD and CFP[218]. The 2023 Commission Report on the functioning of the CFP noted that, despite tangible progress made towards more sustainable fisheries, with many critical stocks being rebuilt and/or decline halted, '*…more progress and stepping up the ambition is needed in order to meet the CFP's environmental sustainability objectives in full.'*[219]

The EBA under the MSFD takes a more holistic perspective than the approach referred to in the CFP, as it requires that economic activities **respect the ocean's ecological**

[213] EBA for fisheries management is defined in Article 4(9) CFP as follows: '[…] an integrated approach to managing fisheries **within ecologically meaningful boundaries** which seeks to **manage the use of natural resources**, **taking account of fishing and other human activities**, while preserving both the biological wealth and the biological processes necessary to safeguard the composition, structure and functioning of the habitats of the ecosystem affected, by taking into account the knowledge and uncertainties regarding biotic, abiotic and human components of ecosystems'.

[214] Regulation (EU) 2019/1241 of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures

[215] Regulation (EU) 2017/1004 of 17 May 2017 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy

[216] Regulation (EU) 2023/2842 of 22 November 2023 as regards Fisheries Control

[217] More information can be found in the first (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:583:FIN) and second report (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52024DC0349) on the implementation of the Regulation (EU) 2019.1241 and in the first report on the delegation of powers under Regulation 2019.1241 (COM(2023) 520 final)

[218] Public consultation as part of the review of the Marine Strategy Framework Directive (MSFD) - Summary of results December 2021. Figure 25: In your opinion, are there any significant gaps, overlaps or inconsistencies between the MSFD and the following sectoral EU policies? (n = 205; multiple choices possible); Responses: gaps (71), overlaps (65), inconsistencies (91), no problem (7), don't know (20), no response (64). https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:Ares(2022)370890.

[219] Communication from the Commission to the European Parliament and the Council, *The common fisheries policy today and tomorrow: a Fisheries and Oceans Pact towards sustainable, science-based, innovative and inclusive fisheries management*, SWD(2023) 103 final.

boundaries to achieve GES. At the same time, it should be acknowledged that the adoption of appropriate measures to reach GES for commercial fisheries (Descriptor 3) through the relevant fisheries tools under the CFP would have been easier if MSFD threshold values were in place[220], such as for by-catch.

Next to limiting the amounts of captured fish, progress towards achieving GES for the relevant descriptors under the MSFD also requires restrictions on the type, intensity and geographical spread of fishing activities that have an adverse effect on marine ecosystems, as well as limiting pollution from sea-based activities.

Article 11(2) CFP allows Member States to implement **spatial measures limiting fishing activities**, for the purpose of complying with environmental objectives, notably through the regionalisation process. This process allows all Member States with a direct fishing interest in the area selected to agree on the necessary fisheries management measures through joint recommendations for adoption by the Commission.

As such, the process of joint recommendations under Article 11(2) CFP has proven challenging, as the adoption of fisheries conservation measures through this process can be time-consuming and requires a certain level of trust among all stakeholders involved[221]. This was also the conclusion of the European Court of Auditors in their 2020 report on the protection of the marine environment, which highlighted that Article 11 CFP had not worked as intended in the areas examined[222].

Since 2013, the Commission adopted ten delegated acts under Article 11 of the CFP Regulation, of which seven are currently in force and one more in scrutiny period, covering several joint recommendations[223]. These delegated acts have put in place fisheries conservation measures inside a number of MPAs in the waters of four Member States: Denmark, Sweden, the Netherlands and Germany. Most measures relate to the restriction of mobile bottom fishing gears in certain parts of the MPAs, others restrict gillnets and other fishing gears with a view to protect also species, such as the harbour porpoise and the common guillemot. Work on conservation measures under Article 11 has only started to accelerate as of 2021, albeit at an uneven pace in the different sea basins, and with a limited conservation scope.[224]

The upcoming evaluation of the CFP Regulation should provide further quantified analysis of the implementation of the regulation and its contribution to the implementation by Member States of the environmental legislation, including the MSFD.

Although fisheries data collected under the ***EU framework for data collection***[225] (the 'DCF Regulation') could further support the assessment of status under several MSFD

[220] European Commission, COM(2020) 259 final.
[221] Marine Strategy Coordination Group, 2019, *Outcomes of the marine-fisheries expert workshop*, 24th meeting of the MSCG, 6 and 7 May 2019, https://circabc.europa.eu/ui/group/326ae5ac-0419-4167-83ca-e3c210534a69/library/6e4db2f2-d2d6-457a-9f69-7ea371aaf3e1?p=1&n=10&sort=modified_DESC
[222] European Court of Auditors, 2020 special report: 'Marine environment; EU protection is wide but not deep'.
[223] Commission Delegated Regulation (EU) 2017/118 of 5 September 2016 establishing fisheries conservation measures for the protection of the marine environment in the North Sea; Commission Delegated Regulation (EU) 2017/117 of 5 September 2016 establishing fisheries conservation measures for the protection of the marine environment in the Baltic Sea and repealing Delegated Regulation (EU) 2015/1778
[224] Commission Communication: EU Action Plan: Protecting and restoring marine ecosystems for sustainable and resilient fisheries, COM/2023/102
[225] Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector

descriptors[226], the framework is designed around data needs for the assessment of commercial fish stocks. Therefore, observations of incidental by-catch of species of birds, mammals, reptiles, and non-commercial fish have proven insufficient for the purposes of the MSFD[227].

Similarly, the collection of data on the distribution and frequency of bottom fishing activities and their effects on seabed integrity is not geared towards MSFD objectives alone. The commercially sensitive nature of the data also means that their availability or accessibility is often limited[228], and they do not support MSFD needs in terms of monitoring and assessment.

The EU's push to develop a competitive and sustainable **EU aquaculture sector**[229] presents both challenges and opportunities from a policy consistency perspective. On the one hand, aquaculture activities can have harmful impacts on marine ecosystems – including 'chemical and biological pollution, disease outbreaks, unsustainable feeds and competition for coastal space'[230], which would require effective mitigation measures to ensure that GES objective under MSFD is safeguarded.

On the other hand, aquaculture activities depend on, and benefit from, clean seas, and in some cases can contribute to GES. Examples of such activities include mollusc farming, aquaculture in ponds and wetlands and the farming of algae and other invertebrates.

These can offer many ecosystem services when appropriately managed, including the absorption of excess nutrients and organic matter from the environment or the conservation and restoration of ecosystems and biodiversity.

4.3.2.3 Maritime transport

Pollution from maritime shipping activities has significant implications on **water quality and marine biodiversity.** Maritime traffic is also the main source of continuous underwater noise, with shipping intensity highest along main shipping corridors and near ports[231]. Pressures from maritime transport include greenhouse gas emissions to air, water discharges, marine litter, underwater noise, acute pollution events such as oil spills or container losses, introduction of non-indigenous species, and physical disturbance of the seabed and species[232].

The European Green Deal promotes a resource-efficient and competitive economy, including in the maritime transport sector, and stresses that transport across the EU,

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and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008 (recast)

[226] In particular for descriptor 1 in relation to biodiversity/bycatch, descriptor 3 in relation to the state of commercial fish and shellfish populations and descriptor 6 in relation to seafloor integrity.

[227] European Commission, COM(2020) 259 final.

[228] Data protection is regulated in Article 2 of the DCF Regulation, in conjunction with Directive 95/46/EC and Regulations (EC) No 45/2001 and (EC) No 223/2009), and provisions on data management are laid down in Section 4 of the DCF Regulation.

[229] Strategic Guidelines for a more sustainable and competitive EU aquaculture for the period 2021 until 2013, European Commission, COM(2021) 236 final (12.5.2021).

[230] Braña, C.B.C et.al., 2021, 'Towards environmental sustainability in marine finfish aquaculture', *Frontiers in Marine Science*, 343.

[231] European Commission, COM(2020) 259 final.

[232] European Environmental Agency, 2021, *European Maritime Transport Report 2021*, Publications office of the European Union, Luxemburg, https://www.eea.europa.eu/publications/maritime-transport; the report also concludes that maritime transport is estimated to have contributed to the more than doubling of underwater energy noise levels in EU waters between 2014 and 2019 (p. 16).

including maritime transport, must minimise pollution. This includes reducing greenhouse gas emissions to reach EU carbon-neutrality by 2050 through amongst others, the inclusion of maritime emissions in the EU Emissions Trading System (ETS) since January 2024[233] , the implementation of the Fuel EU Maritime regulation[234] to promote the use of renewable, low carbon fuels and clean energy technologies for ships, as well as the implementation of the ***EU Sulphur Directive***[235], which aims to reduce the sulphur content in marine fuel.

The further development and implementation of EU maritime policy is therefore relevant for the achievement of GES under the MSFD, in particular for descriptors D2 (non-indigenous species), D8 (contaminants), D10 (marine litter) and D11 (underwater noise), as well as the biodiversity-related descriptors (D3 and D6).

In particular, the following two legal instruments for the prevention of pollution from ships are directly connected to the MSFD: the ***Port Reception Facilities (PRF) Directive***[236] and the ***Ship-Source Pollution Directive (SSPD)***[237].

The PRF Directive aims to increase the delivery of waste from ships to adequate port reception facilities, thereby reducing illegal discharges of ship-generated waste and cargo residues at sea. As such, an adequate implementation of this Directive supports the achievement of GES for D5 (eutrophication), D8 (contaminants) and D10 (marine litter).

The SSPD incorporates international standards for ship pollution offences into EU law and provides a regime of penalties for pollution offences. The Directive covers discharges of polluting substances into internal and territorial Member States' waters, including ports, exclusive economic zones (EEZ) and high seas.

Enforcement of this Directive directly supports MSFD D8 (contaminants). The SSPD was recently reviewed[238], whereby its scope was extended to cover other types of polluting substances, such as plastic waste generated on board ships, relevant for MSFD D10 (marine litter) and sewage, relevant for MSFD D5 (eutrophication).

Certain pollution sources from shipping, such as **lost containers** (including those transporting plastic pellets) negatively impact the marine environment. Based on a recent Commission proposal for a regulation on preventing plastic pellet losses to reduce microplastic pollution[239] the co-legislator is currently considering the inclusion of maritime transport in the scope of the legislation. Plastic pellets are the third largest source of

[233] Directive (EU) 2023/959 of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system.

234 Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC

[235] Directive (EU) 2016/802 of the European Parliament and of the Council of 11 May 2016 relating to a reduction in the sulphur content of certain liquid fuels.

[236] Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC (OJ L 151, 7.6.2019).

[237] Directive 2005/35/EC of the European Parliament and of the Council of 7 September 2005 on ship-source pollution and on the introduction of penalties for infringements, (OJ L 255, 30.9.2005).

[238] Proposal for a Directive of the European Parliament and of the Council amending Directive 2005/35/EC on ship-source pollution and on the introduction of penalties, including criminal penalties, for pollution offences, COM/2023/273 final.

[239] Proposal for a regulation of the European Parliament and of the Council on preventing plastic pellet losses to reduce microplastic pollution, Brussels, 16.10.2023 COM(2023) 645 final 2023/0373 (COD)

unintentional microplastic releases into the EU environment[240] and when accidental losses happen at sea they can be very difficult to clean-up They should be considered when assessing GES under the MSFD, in particular for the assessment of Descriptor 10. At the global level, non-mandatory guidelines have been adopted by the IMO[241] and plastic pellets will be also object of considerations in the coming years in view of developing mandatory rules.

The operational **discharge waters from exhaust gas cleaning systems installed on board ships,** which release hazardous substances into the sea, are covered by the SSPD[242] to a limited extent. At the global level, only non-mandatory guidelines adopted by the IMO[243] apply as the IMO so far was not able to conclude on prohibitions in discussion during the past five years.

4.3.2.4 Offshore energy

The relationship between the MSFD's goal of achieving GES and the production of **offshore renewable energy** is two-sided.

On the one hand, climate change is the biggest threat to marine ecosystems. The ocean is disproportionately impacted by increasing carbon dioxide (CO_2) and other greenhouse gas emissions from human activities, which causes changes in water temperature, ocean acidification and deoxygenation.

This deadly trio leads to changes in oceanic circulation and its chemistry, as well as changes in the diversity and abundance of marine species, making marine biodiversity more vulnerable and reducing ecosystems' resilience to further changes[244].

Therefore, the reduction of greenhouse gas emissions, including through the phasing-out of fossil fuel extraction and the use and the development of renewable energy production, is possibly the most important measure that Member States need to take to achieve GES.

In addition, offshore oil and gas extraction carry significant risks of pollution to marine ecosystems while great efforts are being made to develop renewable energy production in a nature-friendly way[245].

On the other hand, the EU-wide targets set under the recently adopted third revision of the ***Renewable Energy Directive*** (RED III)[246][247] have significant implications when it comes to the use of the maritime space and impacts on marine ecosystems.

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[240] As above.
[241] MEPC.1/Circ.909 on Recommendations for the carriage of plastic pellets by sea in freight containers
[242] The PRFD and SSPD serve to implement the MARPOL Convention in EU law. As such their scope of application is defined by MARPOL, and this does not include plastic pellets, lost containers and discharges from scrubbers in the definition of 'ship-generated waste'.
[243] 2021 Guidelines for exhaust gas cleaning systems (resolution MEPC.340(77)), 2022 Guidelines for risk and impact assessments of the discharge water from exhaust gas cleaning systems (resolution MEPC.1/Circ.899)
[244] EEA, 2023, How climate change impacts marine life, Briefing no. 22/2023
[245] See for instance The Offshore Coalition for Energy and Nature – OCEaN: https://offshore-coalition.eu/
[246] Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU)2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652. RED III seeks to increase the share of renewables to 42.5% by 2030, with an aspiration to reach 45%.
[247] European Commission, Communication 'Delivering on the EU offshore renewable energy ambitions', Brussels, 24.10.2023, COM(2023) 668 final.

Renewable energy generation is specifically mentioned in Annex III to the MSFD under 'uses and human activities in or affecting the marine environment', which should be considered in the context of doing the assessments under Article 8, setting environmental targets under Article 10 and designing the PoMs under Article 13.

As offshore wind energy production is still a relatively new activity, much remains unknown about the influence of offshore wind turbines on marine habitats and species and the functioning of marine ecosystems[248], especially on such a scale.

Conflicts between offshore wind energy production and marine conservation might arise due to noise disturbance, hydrological changes, seabed loss and damage, displacement of species and potential contamination[249].

In its 2023 special report 'Offshore renewable energy in the EU'[250], the European Court of Auditors concludes that '*given the existing human activities at sea and the scale of the planned offshore renewable energy rollout in the coming years […] the environmental footprint on marine life may be significant and has not been sufficiently taken into account*' and that '*ensuring the environmental sustainability of offshore renewable energy development remains a challenge'*.

RED III addresses the obstacles to permitting through better planning as well as shortening and simplifying procedures (Articles 15b-16f) and requires Member States to designate renewables acceleration areas (RAAs), on the precondition that the deployment '*is not expected to have a significant environmental impact*.'

Projects in RAAs can benefit from particularly short and simple permit granting procedures, including exemptions from project-specific environmental assessments. The challenge will be to demonstrate that the planned renewable energy deployment in the envisaged RAAs at sea would not be expected to have significant environmental impacts, given that a lot is still unknown to date on the cumulative environmental impacts of offshore renewable energy development as well as on the effects of the decommissioning of the turbines.

Offshore renewable energy can develop in a sustainable manner through ecosystem-based **maritime spatial planning**, which integrates the ecological boundaries set by the MSFD (see section on MSP above). This requires long-term monitoring and the assessment of the (potential) cumulative impacts on the marine environment and the interaction between offshore renewable energy and other activities at sea[251].

The exploration for and **exploitation of oil and gas** offshore continues to pose a risk to the marine environment[252]. The ***Offshore Directive***[253] acknowledges that '*by reducing the risk*

[248] European Topic Centre on Inland, Coastal and Marine waters (ETC/ICM), Mapping potential environmental impacts of offshore renewable energy, ETC/ICM Report 2/2022
[249] European MSP Platform, 2020, *Conflict fiche 8 in offshore wind and area-based marine conservation*, https://maritime-spatial-planning.ec.europa.eu/sites/default/files/sector/pdf/8_offshore_wind_conservation.pdf
[250] European Court of Auditors, Special report 22, Offshore renewable energy in the EU – Ambitious plans for growth but sustainability remains a challenge, European Union, 2023.
[251] European Commission, COM(2020) 741 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future, p. 10.
[252] https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/other-assessments/impacts-offshore-oil-and-gas-industry/
[253] Directive 2013/30/EU of the European Parliament and of the Council of 12 June 2013 on safety of offshore oil and gas operations and amending Directive 2004/35/EC (OJ L 178, 28.6.2013).

of pollution of offshore waters, this Directive should …contribute to ensuring the protection of the marine environment and in particular to achieving or maintaining 'good environmental status'.

This Directive requires that assessments of the technical and financial capability for a licence should consider the risk, hazards and any other relevant information relating to the licensed area concerned, including the cost of degradation of the marine environment referred to in the MSFD.

4.3.3 Coherence with agricultural policies

Agricultural activities are a major source of pressure on Europe's waters because of nutrient and chemical pollution, water abstraction and physical changes in habitats, including through water storage and land drainage[254].

Agriculture is addressed in the MSFD through the WFD. The 2017 GES Decision requires that standards developed in the WFD are used to determine the quality of marine waters when it comes to nutrient and chemical pollution from agriculture.

Achieving GES for these elements under the MSFD depends entirely on achieving the objectives of the WFD. In its 2019 Fitness Check of the Water Framework Directive[255], the European Commission noted that the limited integration of water objectives in agricultural policy, e.g. due often to lack of cooperation between agriculture and water authorities, is among the key factors explaining why the objectives of the WFD had not yet been achieved.

The ***common agricultural policy (CAP)*** was last revised in December 2021[256] and aims to be 'greener and fairer', requiring Member States' CAP strategic plans 'to clearly take account of the analysis, objectives, and targets of key EU laws on climate change, energy, water, air, biodiversity and pesticides'[257]. The new CAP includes a specific objective "to foster sustainable development and efficient management of natural resources such as water, soil and air, including by reducing chemical dependency"[258]. The new enhanced conditionality[259] standards applied in the 2023-2027 CAP include a requirement linked to controls on diffuse sources of pollution from phosphates. These green objectives and

[254] European Environmental Agency, 2021, *Agricultural policy needs to secure stronger environmental improvements for water in Europe*, viewed April 2022, https://www.eea.europa.eu/highlights/agricultural-policy-needs-to-secure

[255] https://commission.europa.eu/document/download/c6383764-8b90-4624-b91e-719a477ff870_en?filename=swd_2019_0439_en.pdf

[256] European Commission, *The common agricultural policy at a glance*, viewed April 2022, https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en#thenewcap

[257] *Ibid*.

[258] On top of the previously existing Agro-Environmental and Climate Commitments (AECCs), the new CAP includes echo-schemes, which support environment and climate friendly practices. Member States have to dedicate at least 25% of funding from the European Agricultural Guarantees Fund (EAGF) to the eco-schemes. Support from eco-schemes and AECC covers inter alia improved nutrient management and the sustainable use of pesticides. See also, Regulation 1305/2013 on the European Agricultural Fund for Rural Development (EAFRD).

[259] Conditionality links the full receipt of CAP support for area and animal related payments to the compliance of farmers and other beneficiaries with basic standards concerning the environment, climate change, public health, plant health and animal welfare. The basic standards encompass statutory management requirements (SMRs) and standards of good agricultural and environmental conditions of land (GAEC standards).

ambitions are a reflection of the Commission's 2020 ***Farm to Fork Strategy***[260]. Concrete measures mentioned in the Strategy include **safeguarding the quantity and quality of water** used in agriculture.

The CAP strategic plans developed by the Member States may support a broad range of tools (e.g. eco-schemes and agri-environmental-climate payments), including for agricultural practices that increase circularity and improve nutrient and pesticides management. The revised CAP makes no direct reference to marine waters or impacts on the marine environment, but **many of its key objectives – including climate change action, environmental care, food value chain and food health**[261] **– are relevant to protecting the marine environment** and consistent with the objective of achieving GES.

At the same time, the CAP aims to sustain and increase the competitiveness of the agricultural sector. Nevertheless, the CAP requires that Member States take basic measures to control or prevent diffuse pollution in water (through its newly added statutory management requirement 1); therefore, the CAP's consistency with the WFD and MSFD objectives depends on the implementation and enforcement of such CAP controls by the Member States.

To date, nutrient losses from agricultural activities are still too high, resulting in eutrophication, pollution of ground water and a decline in biodiversity[262]. This suggests that the current measures in place under the CAP do not sufficiently take into consideration what needs to be done to achieve the objectives of the WFD and MSFD[263]. There is a need to ensure wider uptake of sustainable agricultural management practices to improve the state of water and aquatic biodiversity.

Besides the continuous performance monitoring and evaluation framework of the CAP[264], an interim evaluation will examine, among others, the effectiveness and coherence of the European Agricultural Guarantee Fund and the European Agricultural Fund for Rural Development by 2026.

In this context, the full and effective implementation of the ***EU Nitrates Directive***[265] is of upmost importance to achieve GES under MSFD for descriptor 5 (eutrophication). Even though the Nitrates Directive is not directly mentioned in the 2017 GES Decision, the measures implemented under the Nitrates Directive constitute basic measures under the WFD, which plays a pivotal role between this land-based pollution and its effects in the marine environment.

A link between food policy and marine resources is also established via the ***Foodstuffs Regulation***[266], which sets out maximum levels for certain contaminants in foodstuffs,

[260]Commission Communication (20 May 2020) on a Farm to Fork Strategy for a fair, healthy and environmentally friendly food system

[261] European Commission, *The common agricultural policy at a glance*, viewed April 2022, https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en#thenewcap

[262] Commission 2020 Implementation Report MSFD, COM(2020)259 final, summary status of the marine environment.

[263] See also findings in Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, section 4.4.2.2.

[264] Cf. regulation (EU) 2021/2115.

[265] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources.

[266] Commission Regulation (EC) No 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs, (OJ L 364, 20.12.2006).

including marine oil and fish. To achieve GES for descriptor 9 (contaminants in seafood), Member States need to comply with these levels and take measures to reduce pollution levels in the marine environment.

Consistency with the Foodstuffs Regulation is one of the clearest success stories of the MSFD, with 14 Member States out of 18 reporting that they have achieved GES for descriptor 9 in 2018.

However, the Foodstuffs Regulation was recently revised[267] and maximum limits for several substances in foodstuffs, including fish and fishery products, were adjusted or added. Certain Member States may therefore no longer be at GES after this review.

The MSFD can also play an increasing role in delivering the 'One Health' approach which aims 'to sustainably balance and optimise the health of people, animals and ecosystems'[268].

4.1.3. Coherence with international and regional conventions

Marine management is a global challenge, thus subject to international regulation and worldwide policy initiatives.

The MSFD strengthens the role of the EU in supporting international obligations on conservation and sustainable use of the marine environment and ties these obligations together into an overall legal framework.

The UN's ***2030 Agenda for Sustainable Development*** is an action plan for people, planet and prosperity, built on 17 Sustainable Development Goals (SDGs) and 169 targets. The ocean-related part of this Agenda – **SDG 14 'Life below water**' – aims to '*conserve and sustainably use the oceans, seas and marine resources for sustainable development*'.

The MSFD contributes to implementing the ocean-related parts of the Agenda, in particular SDG 14, by increasing knowledge of the pressures and impacts of human activities on the sea, and their implications for marine biodiversity, and by taking measures to address these pressures, many of which are directly related to SDG14 targets[269].

74% of respondents to the open public consultation stated that the MSFD has contributed to the EU's global commitments to protect the marine environment, including the SDGs[270].

It should be noted that the definition of 'marine waters' under the MSFD is not fully aligned with the definition under UNCLOS. In particular, the concept of 'coastal waters' as defined under the WFD and integrated into the MSFD does not correspond to the definition and the different categories used under UNCLOS (e.g. territorial waters/contiguous zone, etc.).

(1) Pollution

The MSFD incorporates ***UNCLOS***[271] requirements to observe and measure the risks or effects of pollution and applies this to EU marine waters. It implements various obligations

[267] Commission Regulation (EU) 2023/915 of 25 April 2023 on maximum levels for certain contaminants in food and repealing Regulation (EC) No 1881/2006

[268] https://www.who.int/news-room/fact-sheets/detail/one-health

[269] UN, Holistic approach to oceans and seas in the EU to reach clean, healthy and productive seas for current and future generations – implementation of the Marine Strategy Framework Directive (MSFD), https://sdgs.un.org/partnerships/holistic-approach-oceans-and-seas-eu-reach-clean-healthy-and-productive-seas-current

[270] Public consultation as part of the review of the Marine Strategy Framework Directive (MSFD) – Summary of results December 2021 p.15, Figure 13. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:Ares(2022)370890

[271] United Nations Convention for the Law of the Sea.

requiring Member States (as coastal states) to take measures to prevent, reduce and control pollution of the marine environment from land-based sources, to prevent pollution of the seabed and its subsoil and to prevent the introduction of non-indigenous species.

On 2 March 2022, UN Member States endorsed a ***Resolution at the UN Environment Assembly to End Plastic Pollution, 'the Global Plastics Agreement'*** (UNEA Resolution 5/14), which should also forge an international legally binding agreement by 2024.

The resolution addresses the full lifecycle of plastic, including its production, design, and disposal. The adoption of this agreement is highly relevant to achieving GES for descriptor 10 (marine litter), in particular as regards litter coming from countries outside the EU, which is a major issue in certain marine regions, such as the Mediterranean or the Black Sea.

The Strategic Approach to International Chemicals Management (SAICM) is a policy framework for international action on chemical hazards. It supports a central goal agreed at the 2002 Johannesburg World Summit on Sustainable Development – to ensure that by 2020 chemicals are reproduced and used in ways that minimise significant adverse impacts on the environment and human health.

In this context, a UN intergovernmental panel on chemicals and waste management is being set up (2023-2024) to coordinate action on chemical pollution and hopefully pollution at large.

International agreements on better managing chemical contamination are highly relevant for meeting descriptor 8, in particular with regard to transboundary pollution aspects in marine regions with many non-EU countries.

The ***International Maritime Organization*** has adopted several conventions and instruments to prevent or reduce pollution from shipping, which Member States have signed and/or ratified (see Annex VIII for a description of these conventions). The most relevant is the MARPOL Convention (International Convention for the Prevention of Pollution from Ships), which is broadly transposed and implemented through EU law.

In July 2023, the International Maritime Organization (IMO) adopted its revised strategy to reduce greenhouse gas emissions. The objective is to adopt concrete measures by 2025, in line with the agreed level of ambition. According to the strategy, the IMO should work on both a technical measure (a greenhouse gas fuel standard – similar to FuelEU maritime but at global level) and an economic element, on the basis of a maritime greenhouse gas emissions pricing mechanism. The strategy envisages these measures to be adopted in autumn 2025 to allow for their entry into force in 2027.

(2) Biodiversity

The key principles of the ***Convention on Biological Diversity*** ('CBD')[272], i.e. conservation of biological diversity and sustainable use of its components, are fully contained within the MSFD and its objective of achieving good environmental status. **Descriptor 1**, which generally requires the maintenance of biological diversity, and **descriptors 4 and 6**, which focus on essential ecosystem functions (food webs and seafloor integrity), are most relevant in this context.

To support the goals of pressure reduction and biodiversity preservation, the CBD seeks to establish a **network of MPAs** and 'other effective conservation-based measures'

[272] The UN Convention on Biological Diversity (CBD), which entered into force on 29 December 1993.

(OECMs). This network would manage and respond to human-derived threats in marine ecosystems, with a newly adopted CBD target, under the ***Global Biodiversity Framework*** – that **30% of coastal and marine areas are to be protected by 2030**[273].

While the MSFD (Article 13(4)) fully supports this CBD objective, progress towards a coherent network of effective MPAs has been limited. In 2019, MPAs covered approximately 12% of Europe's seas[274], while the share of MPAs effectively covered by management plans was much smaller. Overall, the 2020 MSFD implementation report clearly concluded that biodiversity loss had not been halted in Europe's seas[275], thus calling in question the capacity of Member States to reach the CBD biodiversity protection targets by 2030.

The GBF is further strengthened by the recently (2023) concluded ***Agreement on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*** (BBNJ Agreement)[276]. This agreement is key to protecting the ocean beyond national jurisdictions, notably by setting up a procedure to establish large-scale MPAs in the high seas. By placing the high seas under a protective legal framework, the agreement provides **geographical continuity** with the efforts made in national waters to protect and restore marine biodiversity and, as such, is fully compatible with and complementary to the MSFD objectives.

(3) Climate change

Climate change is relevant to all MSFD descriptors, as climate-driven events, ocean acidification, warmer waters and ocean deoxygenation have direct and indirect impacts on all components and functions of marine ecosystems[277]. Building on the objectives of the Kyoto Protocol under the ***United Nations Framework Convention on Climate Change (UNFCCC)***[278], the **Paris Agreement** calls for the world to "hold global temperature increase to well below 2°C above pre-industrial levels and pursue efforts to limit it to 1.5°C above pre-industrial levels".

This commitment directly contributes to the objectives of the MSFD, as climate change constitutes the most significant pressure on the marine environment[279], with potential consequences for achieving GES for all descriptors and in all regions. The Paris Agreement also notes "the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity". The importance of ocean health was reiterated in the COP28 Joint Statement on Climate, Nature, and People[280].

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[273] https://www.cbd.int/gbf/targets/

[274] Agnesi, S. et al., 2020, 'Spatial analysis of marine protected area networks in Europe's seas III'. *ETC/ICM Technical Report*, *3*(2020), 40; and COM 2015 Report on the progress in establishing marine protected areas (as required by Article 21 of the Marine Strategy Framework Directive 2008/56/EC), COM/2015/0481.

[275] Marine biodiversity decline across Europe's seas is evidenced in 'The European environment - state and outlook 2020' (https://www.eea.europa.eu/soer-2020/intro), 'The IPBES regional assessment report on biodiversity and ecosystem services for Europe and Central Asia' (https://ipbes.net/assessmentreports/eca), and further references and details are provided in SWD(2020) 61.

[276] The BBNJ Agreement was concluded on 19 June 2023 under the UN Convention on the Law of the Sea (UNCLOS).

[277] Orejas, C. et. al., 2020, 'Towards a common approach to the assessment of the environmental status of deep-sea ecosystems in areas beyond national jurisdiction', *Marine Policy*, 121, 104182.

[278] That is, to achieve the stabilisation of greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous anthropogenic interference with the climate system

[279] EEA, *Climate change impacts on the marine environment*, as above.

[280] https://www.cop28.com/en/joint-statement-on-climate-nature

In a recent ruling[281], the International Tribunal for the Law of the Sea under the UN Convention on the Law of the Sea clarified that "anthropogenic greenhouse emissions into the atmosphere constitute pollution of the marine environment within the meaning of article 1, paragraph 1, subparagraph 4, of the UN Convention"[282].

With this ruling, the Tribunal directly links countries' efforts to reduce greenhouse gas emissions in the atmosphere (and thus fight climate change) with tackling pollution of the marine environment in the context of UNCLOS. This decision should also be read in the context of the MSFD requiring Member States to tackle pollution of the marine environment. In particular, the MSFD specifies that the Member States' obligations under UNCLOS should be fully taken into account under the Directive.

Although the link between the MSFD and climate change is not clear from the text of the Directive itself, it has been recognised that comprehensive marine strategies provide a good framework for monitoring climate change impacts, exploring climate change mitigation measures (notably with regard to blue carbon ecosystem restoration) and applying the ecosystem-based approach to climate change adaptation in the marine environment[283]. Although not explicitly required by the Directive, almost 3% of the recently updated MSFD measures directly address climate change[284].

(4) Coherence with the regional sea conventions (RSCs)

Through its emphasis on regional implementation of the MSFD, the Directive has promoted cooperation among countries to protect the marine environment, as required under UNCLOS[285].

As described in Section 4.1.1, regional sea conventions have an important role to play in supporting the implementation of the MSFD at regional level. The four Regional Seas Conventions (OSPAR, HELCOM, the Barcelona Convention and the Bucharest Convention) have each adopted a Convention (and protocols) for the protection of the marine and coastal environment, focused on reducing pressures and protecting and restoring the marine environment.

At global level, the RSCs and their governance processes help strengthen regional and global consensus, global protection targets (by designating MPAs in the high seas) and policy consistency on key issues relating to the environmental dimension of sustainable development[286].

4.4 EU added value: how did EU action make a difference?

Summary findings:

Without the Directive, comprehensive and regionally coherent marine strategies would not have been developed. Even though some level of protection and progress at regional level could have been expected, in particular in the marine regions

[281] https://www.itlos.org/fileadmin/itlos/documents/press_releases_english/PR_350_EN.pdf
[282] https://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf
[283] European Commission, COM(2020) 259 final.
[284] Commission Staff Working Document accompanying the document Report from the Commission to the Council and the European Parliament on the *Commission's assessment of the Member States' programmes of measures as updated under Article 17 of the Marine Strategy Framework Directive (2008/56/EC)*, SWD(2024) 681
[285] European Commission, COM(2020) 259 final.
[286] UNEP, *Regional Seas Programme*, https://www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/why-does-working-regional-seas-matter.

predominantly surrounded by EU Member States, and progress with the implementation of sectoral policies would have continued in all Member States, approaches to the protection of the marine environment and the sustainable use of marine resources would have been less integrated and with greater disparities across the EU without the Directive.

The binding nature of the Directive has been the key driver in this respect. Subsidiary and proportionality principles are largely adhered to, as the Directive grants a large margin of discretion to Member States and points to the marine regions as the level where coordinated implementation should primarily take place. At the same time, the high degree of flexibility given to Member States leads to a low ambition and low level of comparability in implementation.

This section looks at the EU added value of the MSFD as a legal instrument (value that is additional to what would otherwise have been created by EU countries acting alone).

Against the background of the considerations/conclusions on effectiveness, efficiency and coherence (consistency), as set out in Chapters 4.1, 4.2 and 4.3 respectively, this section identifies the main achievements, which would not have been reached without the Directive, and considers the Directive's legal basis and functioning as measured against the principles of proportionality and subsidiarity.

Key added value

The Article 20 report highlights that the Directive is one of the most ambitious international marine protection frameworks in the world, combining the efforts of several countries to achieve GES in almost 8 million km^2 of sea area[287].

The main advantage of the MSFD compared to other relevant legal instruments is its **common, holistic and cross-sectoral approach** to improving the state of European seas, as opposed to the more piecemeal approach of sectoral policies which focus on separate issues that are, directly or indirectly, related to the condition of marine waters.

The MSFD **tackles a wide range of issues**, such as marine biodiversity, commercial fish populations, seabed integrity and the hydrological and chemical properties of oceans. It aims to **increase and share knowledge** about the marine environment and to improve **regional and international cooperation** on protecting the natural environment in the oceans.

Most of the respondents to the online public consultation (79%) indicated that, without the Directive in place, their country would have either not developed a marine strategy or put in place a strategy of much lower quality and ambition compared to marine strategies developed in line with the MSFD framework[288].

[287] Total area of marine waters in the European Union = 7,958,556 km^2, based on the sum of individual country's total area of marine waters as reported in WISE-marine (https://water.europa.eu/marine/countries-and-regional-seas/country-profiles)

[288] Out of 200 respondents, 156 believe that, without MSFD, their country would not have set a marine strategy (95) or would have developed one of less quality (61). Among the 156 respondents holding this opinion, the majority were EU citizens (72, 83% of total responding EU citizens), followed by NGOs (28, 80% of total responding NGOs), public authorities (21, 72% of total public authorities), research institutions (15, 88% of total research institutions), environmental organisations (10, 100% of the total), business associations (3, 33% of the total), companies (5, 56% of the total), trade unions (2, 67% of the total). See *Public consultation as part of the review of the Marine Strategy Framework Directive (MSFD) - Summary*

Some progress would have been made at regional level without the Directive in place, in particular in those marine regions predominantly bordered by EU Member States, but with a far less integrated approach, and with greater disparities between the sea regions.

From the stakeholder consultations there also appeared to be a consensus that EU legislation directly aimed at marine environmental protection filled a necessary policy gap, and that the binding nature of EU legal obligations is a key driver of success, even in the absence of strong enforcement action. Most relevant EU legislation is sector-specific and does not cover EU waters beyond coastal waters.

The MSFD has thus been fundamental in establishing a broad framework dedicated to protecting and preserving the marine environment, covering a wide marine area (from coastal and territorial waters to the Exclusive Economic Zone, and even on the extended continental shelf, where some Member States exercise jurisdictional rights extending into the high seas).

Success story – reducing beach litter

An illustration of the added value of the MSFD in a specific sector will be provided in the next Zero Pollution Monitoring and Outlook, based on a recent JRC report on beach litter trends,[289].

Effective measures on this issue are the result of a very strong push from public opinion to act, high-level political commitments to stop the problem (e.g. the 2018 Plastics Strategy, the 2019 zero pollution ambition under the EGD), a solid legal basis for authorities to take action (MSFD, Single-Use Plastic Directive, Port Reception Facilities Directive) and improved quality of data.

As this concerns a period where the specific sectoral legislation, i.e. the SUP Directive, was not yet in force, this decrease is also clearly attributable to action taken under the MSFD, including in the regions.

Legal basis, subsidiarity and proportionality principles

The MSFD was originally adopted to set up an EU-wide framework through which Europe's marine environment could be more effectively protected; this was something that Member States could not satisfactorily achieve on their own and therefore required EU-level action.

It nonetheless leaves a wide margin of discretion to Member States: it is for Member States to define desired outcomes in terms of GES, albeit within the parameters set by the 2010 and 2017 GES Decisions, to develop monitoring programmes and PoMs, and to set targets that take account of the unique characteristics of their individual marine ecosystems and regional needs.

These arguments were at the heart of the subsidiarity and proportionality analysis at the time the MSFD was adopted, and to some extent remain valid today.

of results December 2021 p.13, Figure 12. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:Ares(2022)370890.

[289] JRC Technical Report, *European Coastline Macro Litter Trends 2015-2021*, May 2024, as presented to MSCG, 22 April 2024

The MSFD closes gaps in policy consistency and transboundary elements that could not be delivered through national action alone and leaves considerable flexibility to Member States to determine their own targets and measures.

At the same time, the failure to achieve the overall objective of GES and significant gaps in marine strategies (see the analysis of effectiveness) indicate that the approach has not been fully effective. The high level of flexibility given to Member States in the Directive coupled with a lack of ambition and poor implementation of the Directive negatively affect its EU added value.

4.5 Relevance: is the MSFD still relevant today?

Summary findings:

The objectives and requirements of the Directive remain fully relevant today. There is a clear need for EU action in the area of marine protection, given the dire state of marine ecosystems and the cross-boundary nature of the challenges to be addressed.

However, shortcomings have been identified in the current framework, in particular in relation to the setting of targets and timelines, gaps in data collection and monitoring, the role of the Regional Seas Conventions and ensuring coherence between policies.

The Directive also fails to sufficiently address climate change impacts.

Relevance of the MSFD objectives and requirements

In the wider context of the Green Deal transition for the blue economy, the seas and their resources provide huge potential for human societies and economies. However, this transition should take place in a truly sustainable way. This makes the MSFD even more relevant, as it defines what 'sustainable' means in terms of the use of marine resources and the impacts on the health of marine ecosystems.

The current state of the marine environment demonstrates that the need for public intervention to protect the marine environment and ensure the sustainable use of its resources remains as relevant now as when the MSFD was adopted.

The marine environment is under pressure from land and sea-based human activities, as well as climate change, which reduces the resilience of its ecosystems. These challenges mirror those the MSFD was designed to address, suggesting that the needs identified at the time are as urgent and relevant as ever.

The MSFD continues to play a role in meeting environmental, sectoral, and cross-cutting policy objectives by:

- providing a coherent policy framework that defin**es the sustainable use of marine resources** and assesses the cumulative impacts of human activities at sea;
- providing a framework for **collecting data and information** to feed into other policies and (global) assessment and reporting requirements;
- helping **deliver on international objectives** to which the EU has committed, in particular SDG 14 ('life below water'), the Paris Agreement and related international climate initiatives, and the CBD.

The 2017 GES Decision clearly and comprehensively sets out what should be monitored and assessed under the different descriptors. It has to a large degree contributed to more

consistent use of definitions, methodologies and monitoring results from other policies. However, **major gaps remain** in terms of methodological standards, indicators for determining GES and harmonised standards for monitoring and assessment.

With improvements in the marine environment taking a long time to manifest themselves, achieving GES across the 11 descriptors in all EU marine waters by the specified **2020 deadline has turned out to be unrealistic and unfeasible**.

Whereas the overall approach of the Directive is in principle still suited to tackling the main threats in a coordinated way, several **shortcomings have been identified in the current framework and approach** of the Directive, in particular:

- Many stakeholders have pointed to the lack of clear **targets and timelines**, focused on reducing pressures, which would in turn contribute to improving the state of the environment for different descriptors.
- While the iterative planning process set out by the Directive facilitates adaptive management and the integration of new knowledge into MSFD implementation, the relationship between, and timing of, the different aspects of marine strategies means that **earlier results often do not adequately inform subsequent outputs** (for instance, measures are designed based on an assessment of the state of the environment that has been reported four years earlier).
- In many cases, conclusions on the actual state of the environment cannot be reached because of incomplete knowledge and management decisions are often taken on the basis of **the knowledge available, following the precautionary principle**. There are still significant gaps in data collection/monitoring, resulting in a lack of quantitative, comparable and high-quality determination of GES by Member States.
- There is a risk that the MSFD might only provide **a framework for linking existing policies rather than prompting new action**. The environmental targets set in the marine strategies should be linked to relevant (sectoral and environmental) policies, which should subsequently be translated into concrete measures. This requirement is not sufficiently implemented in practice – or where it is implemented, targets vary greatly between Member States.
- While they play a key role in MSFD implementation, there is **uncertainty about the exact role of the RSCs** in the MSFD.

Integration of climate change

Climate change is one of the main pressures impacting the state of the seas. The EEA concludes that observed changes in ocean warming, acidification and oxygen content indicate that significant systemic changes are taking place in all EU marine regions, further eroding resilience to the climate crisis[290].

The Mission Board Healthy Oceans, Seas, Coastal and Inland Waters[291] estimates that around 66% of the world's ocean area is experiencing increasing cumulative impacts from

[290] EEA Marine Messages II, 2019.

[291] Blenckner, T. et al., 2015, 'Past and future challenges in managing European seas', *Ecology and Society*, 20(1): 40 https://www.ecologyandsociety.org/vol20/iss1/art40/; European Academies' Science Advisory Council and the Joint Research Council of the European Commission, 2016, *Marine sustainability in an age of changing oceans and sea,* EASAC policy report 28, https://ec.europa.eu/jrc/sites/default/files/jrc-easac-marine-sustainability-changing-oceans-seas_en.pdf

climate change.

Interannual variation in climate change may affect marine ecosystems, especially the distribution, abundance and seasonality of marine biota, including commercial fish populations[292]. The recent European Climate Risk Assessment confirms that 'among climate risks related to ecosystems, risks to coastal and marine ecosystems have the highest severity in the current period as well as the highest urgency to act.'[293]

Outcomes from the stakeholder consultations suggest that climate change impacts are seen as a key challenge for the protection and sustainable management of the marine environment and are not sufficiently addressed by the MSFD.

Current MSFD monitoring and assessment activities do not sufficiently integrate climate change impacts, such as temperature rise, ocean acidification, 'dead zones' and sea level rise. Admittedly, the 2017 GES Decision already sets out features and parameters that could be used to monitor and assess climate change impacts, especially in the context of hydrographical conditions (descriptor 7). But at this stage, these are neither well-defined nor attributed to climate change.

Yet the ocean is one the largest carbon sinks in the world. So far, the ocean globally has absorbed 91% of the heat generated by increased greenhouse gas emissions to the atmosphere, and around 30% of carbon emissions[294]. Blue carbon ecosystems, such as mangroves, seagrass beds and salt marshes, have been shown to be significant carbon sinks, although small in extent.

In addition, knowledge is increasing on the carbon sequestration capacity of other components of the marine environment, such as sedimentary habitats[295] or whales[296]. Making these ecosystems healthy and fully functioning again by achieving GES can therefore be an important nature-based part of climate mitigation.

Public awareness and concerns

Public perception surveys show that marine protection is relevant to EU citizens and that there is strong awareness that the marine environment is under threat from human activities. Concerns focus on marine pollution and overfishing, and (to a lesser extent) the condition of species and habitats, chemicals, plastic, and climate change. These concerns have only marginally changed since the adoption of the MSFD.

The Directive includes provisions on stakeholder participation/involvement in the implementation process.

Flexibility of the MSFD framework

The design of the MSFD offers a high level of flexibility, allowing Member States to define GES and set targets for their marine waters acknowledging the variety of marine

[292] Mission Board Healthy Oceans, Seas, Coastal and Inland Waters, 2020, *Mission Starfish 2030: Restore our Ocean and Waters*, https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/672ddc53-fc85-11ea-b44f-01aa75ed71a1

[293] European Climate Risk Assessment (to be published)

[294] EEA, *How does climate change impact marine life?,* as above.

[295] For instance: Porz, L., Zhang, W., Christiansen, N., Kossack, J., Daewel, U., and Schrum, C.: Quantification and mitigation of bottom-trawling impacts on sedimentary organic carbon stocks in the North Sea, *Biogeosciences*, 21, 2547–2570, 2024.

[296] International Monetary Fund, Chami R., et al., *A strategy to protect whales can limit greenhouse gases and global warming*, December 2019. Available at: Nature's Solution to Climate Change – IMF F&D

ecosystems in and pressures on the European seas.

The CIS provides a platform for sharing lessons learned, developing guidance and coordinating implementation.

There are no limitations within the Directive preventing adaptation to scientific and technical progress. However, this flexibility (especially regarding the determination of GES and the definition of environmental targets) opens the door to governments setting low ambitions and relying overly on existing activities under other policies, with concrete policy action being hampered by comparatively slower science-based processes[297].

5 WHAT ARE THE CONCLUSIONS AND LESSONS LEARNED?

With the MSFD, the EU put in place, back in 2008, a comprehensive policy for protecting and managing the marine environment and sustainably using its resources based on an ecosystem-based approach. While ambitions were high at the time of its adoption, as reflected in the 2020 deadline for achieving good environmental status for all marine waters, the reality has proven complex.

The marine environment is subject to multiple pressures, exacerbated by the worsening triple planetary crisis. and much is still unknown about the state of the marine environment and its characteristics, and about the impacts of anthropogenic activities on the many species living there.

The MSFD today plays a role in the wider European agenda on water resilience, which is a precondition for the EU's competitiveness, open strategic autonomy and security. Clean, healthy and productive seas and oceans are central to our green and digital transitions and for the EU's long-term prosperity. The MSFD can also directly contribute to the objectives of the 'Ocean Pact' announced by President von der Leyen in her 2024-2029 Political Guidelines[298], with a view to 'boosting the blue economy and ensuring the good governance and sustainability of our oceans in all of their dimensions'.

To answer whether the Directive has been successful in reaching its objectives, the evaluation assessed the progress made towards reaching the overarching 2020 GES goal, as well as its process-based objectives. The evaluation concluded that the Directive is more fit for purpose on the process-driven obligations than on the result-oriented obligations, and so has been only partially successful to date. At the same time, it should be acknowledged that changes in the marine environment can take decades to materialise; further significant benefits are expected from the MSFD-relevant actions taken so far.

Conclusions from this evaluation are set out below, including lessons learned that could guide further development and implementation of the legislative framework.

1. ***The MSFD has put in place a comprehensive and integrated framework for protecting EU marine waters, but GES has not been achieved and progress on the ground has been limited, whereas science has significantly improved on the triple planetary crisis and the underlying unsustainable use of resources.***

[297] Milieu Consulting & ACTeon, *Support to the evaluation of the Marine Strategy Framework Directive*, January 2023.
[298] Europe's choice – Political guidelines for the next European Commission 2024−2029 – Ursula von der Leyen, Candidate for the European Commission President, Strasbourg 18 July 2024

Marine strategies have been developed by Member States, and are being updated through the different implementation cycles, including (1) assessments of marine waters, (2) determination of GES across 11 descriptors, (3) setting of environmental targets, (4) monitoring programmes and (5) programmes of measures (PoMs).

The objective of achieving and maintaining good environmental status is one of the most ambitious in the world for marine protection and, since the adoption of the Directive, has led to increased coordination across governments at regional and EU-level, as well as with non-EU countries sharing the same marine regions. This also lays at the basis of wide-ranging monitoring of the marine environment and, to some extent, actions to tackle some of largest and newest threats to marine ecosystems.

However, there are significant gaps in the marine strategies, such as in relation to:

- the determination and quantification of GES (based on threshold values);
- setting of appropriate, harmonised environmental targets;
- developing monitoring programmes covering all necessary components in a consistent manner;
- PoMs that directly reduce pressures.

The overall goal of 'achieving good environmental status by 2020' has not been met. The implementation of the marine strategies has not resulted in a sufficient reduction of pressures at sea.

This failure is partly attributable to a number of external factors outside the direct control of the Directive (e.g. political priority-setting, actions taken by non-EU countries), but it is also partly due to several regulatory and governance weaknesses inherent to the Directive. As a result, the Directive has not reached its full potential of ensuring an ecosystem-based approach to protecting and sustainably using marine waters.

Lessons learned

The complexity of the legislation, and its lack of clearly enforceable provisions, hinders the development of adequately effective marine strategies and has resulted in an insufficient level of action in the four marine regions in to reduce the key pressures on the marine environment and ensuring a sustainable use of marine resources.

This includes unclear key definitions and concepts (e.g. GES, EBA), and unclear procedures for setting legally binding thresholds at regional and EU level.

Setting a 2020 deadline for achieving GES has proven unrealistic.

In particular, the following factors limit the Directive's effectiveness:

- The lack of additional result-oriented obligations (tackling the triple planetary crisis of climate change, biodiversity loss and pollution), which would be easier to enforce and build on a realistic trajectory over time in line with key relevant EU policies.
- The shortcomings in alignment with obligations and key concepts under other legislative frameworks.
- Weaknesses in governance (including data management) and limited capacity in Member States, which result in poor implementation and the non-achievement of the overarching marine protection and sustainable use goals.

2. ***Overall, and notwithstanding the lack of data the MSFD has delivered in terms of cost-effectiveness, as the costs of implementation are outweighed by the***

estimated benefits in all scenarios. Moreover, there is good potential for achieving a reduction in administrative burden by addressing inefficiencies in the system.

Costs stemming from MSFD implementation include administrative and adjustment costs. These relate to designing and implementing the marine strategies and the related PoMs, regularly monitoring and reporting on the state of marine waters. Estimates of the administrative costs incurred are comparable to what was anticipated in the impact assessment at the time the Directive was adopted.

Because marine ecosystems recover only slowly, most of the benefits stemming from MSFD implementation up to now will only materialise in a few years. Nonetheless, estimates of the benefits achieved so far (in terms of both environmental benefits and efficiency gains) appear to outweigh the costs incurred. The benefits stemming from full GES achievement are estimated to far outweigh the costs. Admittedly, however, putting a value on MSFD benefits is still challenging and the process must be made more robust in the future.

Nevertheless, several factors have limited the cost-effectiveness of MSFD implementation and caused unnecessary administrative burdens. These include insufficient coordination between policies and administrations, lack of harmonised monitoring, cumbersome reporting (both at EU and regional level), unclear division of work and responsibilities between the EU and regional level, and insufficient digitalisation of monitoring, reporting and data exchange.

Although Member States have received financial support under the EMFF/EMFAF, LIFE, and other EU financing mechanisms, overall funding for the MSFD is not sufficient, and both financial and human resource constraints hinder the design of effective marine strategies based on sound data collection, the implementation of related measures, regional cooperation and, ultimately, GES achievement.

Lessons learned

While the benefits linked to the MSFD implementation appear to outweigh the costs in all scenarios, there are still major inefficiencies that lead to unnecessary administrative costs.

Through improvements in governance, data management, monitoring and reporting, and through better use of digital tools, the administrative burden linked to the MSFD implementation can be reduced.

There is a clear need for allocating more EU funding, and easier access to such funding, for implementing the MSFD, and achieving GES and associated benefits.

3. ***The MSFD has paved the way for broad-scale marine data collection and knowledge-building. However, the data collected so far is not fully harmonised and often lacks sufficient quality: this leaves major knowledge gaps, while the significant potential of digitalisation, data-sharing and earth observations is largely untapped.***

Vast amounts of data on the state of the marine environment and its pressures are being collected and reported under the MSFD. The data has supported knowledge-building and scientific, policy and legal developments. At the same time, monitoring remains insufficient due to the complexity of marine ecosystems and the broad MSFD scope, and collection and reporting practices are not always aligned with policy needs.

Moreover, collected data is not sufficiently harmonised and/or accessible, both across Member States and policy areas. As a result, the data is either not shared or cannot be easily reused. This in turn limits the quality of assessments of the state of the marine environment and the quantification of how far we are from GES thus hampering the design of effective measures.

Lessons learned

Data management is hampered by the lack of harmonised monitoring standards across EU marine regions, as well as the lack of coordination of monitoring strategies across Member States and policy areas. There is also a clear need for better use of innovative and cost-effective monitoring techniques, such as earth observations, and data quality control by experts/national research institutes.

As the data is not systematically harmonised and not always of good quality, it leads to problems with regional and EU assessments, and data-sharing with other digital platforms, including in view of the development of the Digital Twin of the Ocean, and communication with decision-makers and the public.

The use of the European Marine Observation and Data Network (EMODnet) to increase the quality, accessibility and visibility of the data collected by Member States is not fully exploited.

There is a need for strengthening digital solutions and reducing reporting requirements where these do not directly serve policy needs.

New analytical tools such as artificial intelligence and machine learning and solutions, such as cloud computing for data storage, are not sufficiently exploited, limiting opportunities for improving our understanding of the ocean in a way that could be useful for decision-makers.

4. ***Regional coherence and cooperation/coordination are key pillars of the MSFD, but regional differences persist.***

The MSFD heavily relies on implementation at regional level, notably through the Regional Seas Conventions (RSCs).

Cooperation within these regional bodies has increased significantly during the years under review, incorporating MSFD objectives, requirements, and methodologies. Nevertheless, there are great disparities across RSCs.

In some cases, contracting parties are almost exclusively EU Member States, whereas other RSCs have many non-EU countries as signatories, operating in a different and often difficult geopolitical context. Even where EU Member States are the dominant players, those RSCs are still not EU bodies and moreover have limited enforcement mechanisms. This may partly explain why RSC practices may not always be fully in line with the MSFD, and why inconsistencies persist, even within the same marine region.

Lessons learned

Regional cooperation has not led to an optimal level of regional coherence due to unclear procedures for Member States on the interactions between EU policies and the RSCs.

At the same time, there is legal ambivalence in the Directive's requirements on regional coordination and coherence, making it difficult to enforce these rules.

5. ***The MSFD is generally coherent with EU environmental policy, although some inconsistencies exist with the WFD and HD. As regards the interplay between the MSFD and other relevant sectoral policies, in particular those in the fisheries and maritime sector, there is good potential to improve coherence and ensure a better application of the ecosystem-based approach.***

The MSFD was designed to work in coordination with other EU environmental policies already in place, particularly those in the context of water and nature protection. The implementation of these policies plays a major role in contributing to the achievement of the Directive's objectives, in particular providing data relevant for the assessments and the design and implementation of measures for achieving GES in EU marine waters.

Some inconsistencies remain with the Water Framework and the Habitats Directives, which concern overlaps of scope, differing methodologies and timelines that are not aligned. This results in duplication of reporting efforts and potential gaps in the level of protection mainly linked to unclear remits for action across the- often different- authorities in charge. The strong overlaps in geographical scopes, objectives and measures between the two frameworks will require a high level of coordination between authorities to ensure effective and cost-efficient implementation.

EU policies under the EU blue economy promote the 'sustainable use' of resources, while ensuring economic and social development. Although these objectives should not prevent the achievement of GES, the different interpretation of sustainability in these sectors may undermine coherence with the MSFD.As the MSFD does not regulate economic sectors directly, ensuring policy coherence is therefore even more important.

If not implemented in an environmentally sustainable way, blue economy policies could potentially conflict with MSFD measures for achieving good environmental status, especially in view of the potential expansion of maritime activities such as offshore energy and aquaculture.

Also, links with the MSFD were not sufficiently exploited in relevant legislation that emerged after it was adopted, notably the MSP Directive, which has the potential to make the MSFD more operational through effective planning of activities that impact the marine environment.

Lessons learned

The success of the Directive is closely associated with the integration of its objectives in sector-specific policies. It helped in the design and revision of EU laws, which factor in marine protection from the outset.

There is a need to close the remaining coherence gaps with the WFD and the HD, coordinating implementation with the NRR, and establishing closer links with the Maritime Spatial Planning Directive.

There is a need to ensure that MSFD and blue economy policies mutually enhance and complement each other, by serving the same sustainability goals whilst reconciling potentially competing interests, and by offering stability to economic sectors while respecting the carrying capacity of EU seas and ocean.

To this end, greater and more consistent cross-sectoral cooperation between different governmental bodies would help deliver on common objectives.

6. ***Despite shortcomings, the MSFD shows clear EU added value and remains relevant to date, but does not fully integrate climate change impacts.***

By putting in place an integrated and comprehensive framework for marine protection and the management of marine resources, the MSFD has had clear added value in a landscape which would otherwise have remained highly fragmented (depending on the pressure being regulated, or the specific marine region).

Without the MSFD in place, Member States would not have put in place comprehensive marine strategies to achieve GES across 11 descriptors. Extensive monitoring that is taking place under the MSFD has generated vast amounts of data and knowledge on the state of EU marine waters, which in turn has supported policy developments in related areas, such as regulating plastic pollution. The terminology and concepts of the MSFD have moreover made their way into the regional and international jargon on marine environmental protection.

And the establishment of an EU framework for marine protection strengthened the EU's capacity to act together in all marine regions which are all shared with non-EU countries.

Since the adoption of the MSFD, the most significant changes in the policy landscape affecting the marine environment include the 2015 UN SDGs and the 2015 Paris Agreement, the Kunming-Montreal Global Biodiversity Framework and the BBNJ Agreement, and at European level**,** the EGD, with its associated strategies and action plans.

Recent assessments of the state of the marine environment demonstrate that the need for public policies to protect the marine environment and ensure the sustainable use of its resources is as relevant now as at the time the MSFD was adopted. As such, the MSFD is a key pillar of the EGD.

Although implementation of the Directive contributes to adaptation to and mitigation of climate change, impacts from climate change on marine ecosystems are not sufficiently addressed in the Directive. This is even more salient, given that climate change is a key challenge for the protection and sustainable management of the marine environment.

In the light of the current triple planetary crisis and the growing demands of the nexus between water, energy, raw materials, food and ecosystem restoration, the MSFD provides a management framework for planning activities relevant for the green transition (e.g. for offshore renewable energy), while ensuring we use marine resources sustainably and our seas remain clean, healthy, and productive.

Lessons learned

The MSFD provides a solid framework, taking an ecosystem-based approach to managing different activities that have an impact on the marine environment, and promoting a sustainable use of marine resources. However, it is not entirely future-proof and a number of shortcomings may need to be addressed to ensure its long-term viability:

- The Directive does not fully allow for monitoring and reporting on progress towards GES through, and lacks a set of clear, common and quantified interim targets.
- There is no common approach to monitoring and data accessibility; in addition, the Directive lacks clear procedures regulating implementation at subregional, regional and EU levels.
- The implementation and reporting cycle is not fit-for-purpose, with a number of inefficiencies that result in unnecessary administrative burden on the Member States.
- Links to the Maritime Spatial Planning Directive are missing in the Directive, despite the obvious and necessary synergies between the two frameworks.

- Coherence issues between the MSFD and other environmental and sectoral EU policies stems from the lack of clearly defined and quantified objectives.
- Climate change impacts are not fully integrated, including in the design and implementation of the MSFD programmes of measures.

The Directive is the result of a political context put in place nearly 20 years ago. Its relevance can be increased by better factoring in the worsening triple planetary crisis and today's policy context.