Developing a dynamic baseline scenario for the revision of the MSFD

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1 INTRODUCTION

Article 23 of the Marine Strategy Framework Directive requires the Commission to review the Marine Strategy Framework Directive (MSFD) by 15 July 2023. The Commission's Directorate General for Environment (DG ENV) has recently received an external evaluation study of the MSFD, which will, support the Commission's own evaluation report. Meanwhile DG ENV has started work on an Impact Assessment (IA) for a possible future revision of the Directive, including an impact assessment procedure.

Impact assessments require the definition of a dynamic baseline scenario, which describes the evolution of the reference situation – i.e. the current state of play - should no further action be taken[1]. The baseline serves as a basis against which the environmental, economic and social impacts of policy options can be assessed and compared[2]. This background note presents the main building blocks of the dynamic baseline scenario for the MSFD.

The baseline assumptions presented in this document are mostly qualitative and aim to underpin the development of environmental models (by the JRC) that will be used to quantify the baseline in terms of the evolution of environmental status for selected MSFD descriptors, and to support assessment of the environmental impacts of future policy options. This will require a clear definition of scenarios, including the baseline scenario, and modelling parameters that can reflect the changes expected from proposed policy options.

2 DYNAMIC BASELINE APPROACH

Questions to workshop participants on the overall approach

Q1. What is an appropriate **time horizon** to consider in the dynamic baseline scenario (and future impact assessment), considering key socio-economic developments, trends in blue economy activities, climate change and policy responses?

Proposed approach for the dynamic baseline

The Better Regulation Toolbox[3], points out that the baseline scenario should reflect what would happen under a 'no-policy-change' scenario which includes all relevant global, EU-level and national policies and measures which are assumed to continue to be in force. In the context of the MSFD, this means that the baseline scenario describes how the current situation, in terms of environmental status and pressures on the marine environment, is expected to evolve without new policy intervention (relying on the existing framework without introducing any proposals for improving the MSFD), and assuming realistic implementation of existing legislation.

To develop the baseline, an appropriate time horizon is required, which will allow for the expected impacts to be realised; expected socio-economic developments as well as important technological and societal developments should be framed around this time horizon.

To define and structure what is to be considered in the baseline and with what level of precision/detail the Driver-Activity-Pressure-State-Impact-Response (DAPSIR) framework is applied (Elliot et al., 2017)[4]. The DAPSIR framework is a way to describe causal relationships between society and the environment and is designed to bring together the broad set of information necessary to understand the big picture when assessing the marine environment. The description of the baseline scenario focuses on

[1] Better Regulation Toolbox, Tool#60 Baselines. br_toolbox-nov_2021_en_0.pdf (europa.eu)
[2] Better Regulation Guidelines. swd2021_305_en.pdf (europa.eu)
[3] Better Regulation Toolbox, Tool#60 Baselines. br_toolbox-nov_2021_en_0.pdf (europa.eu)
[4] Elliot, M., Burdon, D., Atkins, J.P., Borja, A., Cormier, R., de Jonge, V.N., Turner, R.K. (2017). 'And DPSIR begat DAPSI(W)R(M)!' – A unifying framework for marine environmental management. Marine Pollution Bulleting 118, pp 27-40.

Drivers (section 3), Activities (section 4) and Responses (section 5)[5].

3 DRIVERS OF CHANGE FOR EUROPE'S MARINE ENVIRONMENT

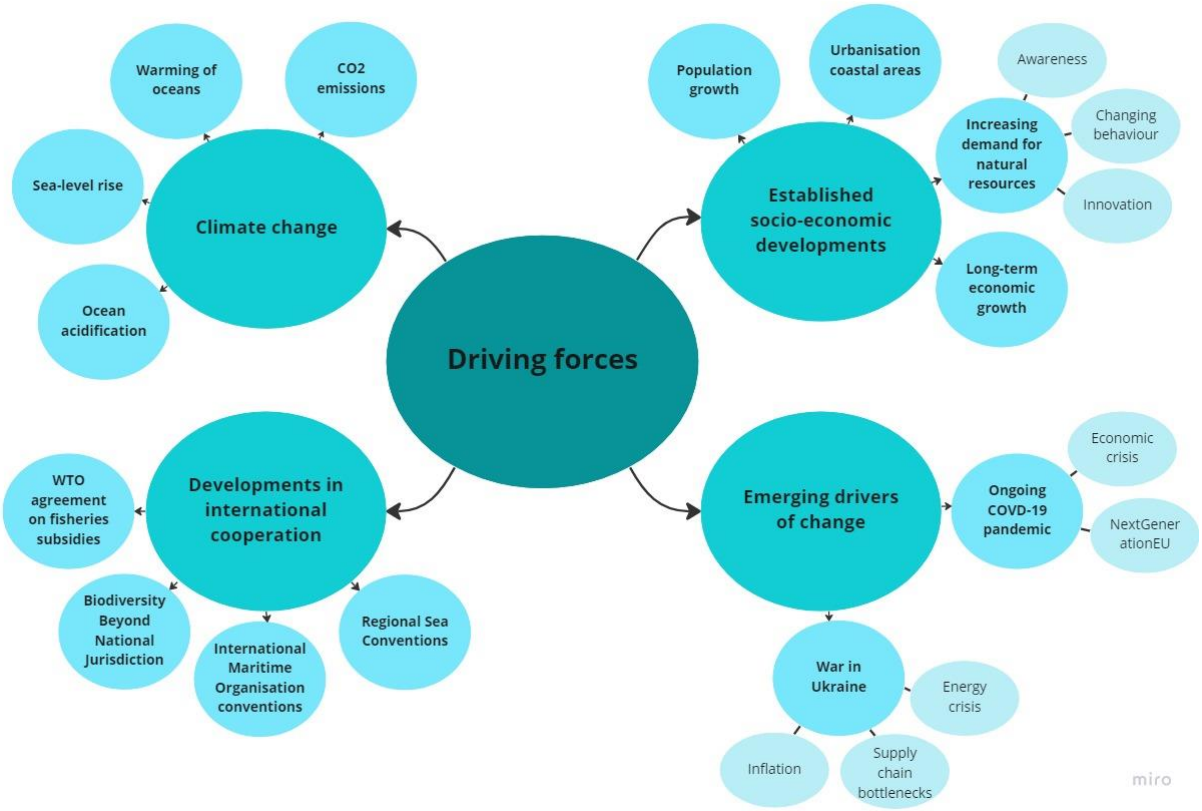
Questions to workshop participants on the drivers of change

Q2. Which other established or emerging **socio-economic developments** or developments in international cooperation driving or mitigating pressures on the marine environment should be considered in the dynamic baseline scenario?

Q3. What are the main – direct and indirect - implications of **climate change** on the marine environment and GES descriptors? How do future climate change mitigation and adaptation efforts affect progress?

Drivers of change refer to long-term driving forces that will significantly influence the future. Drivers are exogenous, meaning that they affect society and blue economy sectors and thereby indirectly affect marine ecosystems, but, in turn, they can be altered or managed by the relevant environmental policy response in place (e.g. the MSFD). Driving forces include socio-economic developments and climate change, developments in international cooperation, as well as emerging drivers of change. In line with the Better Regulation Toolbox[6], the description of drivers considers megatrends from the Commission's Megatrends Hub[7]. Figure 1 provides an overview of the driving forces that have been identified as relevant for the achievement of future MSFD objectives.

Figure 1: Summary of drivers of change of relevance for Europe's marine environment



[5] Pressures resulting from economic activities, changes in state of the marine environmental system and impacts on welfare are not considered in this report. Pressures and changes in state will be modelled by environmental models from JRC.
[6] Better Regulation Toolbox, Tool#20 Strategic foresight for impact assessments and evaluations. br_toolbox-nov_2021_en_0.pdf (europa.eu)
[7] Megatrends Hub | Knowledge for policy (europa.eu)

Established socio-economic developments

While the EU population will continue to grow for at least 20 years, it expected that it will form a shrinking proportion of the world population8. Europe's level of urbanisation is expected to increase to approximately 83.7% in 2050[9] and built-up areas are expected to expand across most of the EU including in coastal areas. Urban development in coastal areas entails many environmental pressures as cities, infrastructure and industries are important drivers of marine pollution and a source of debris and pollutants into oceans; it causes a spatial conflict with the preservation of habitats, an increase of urban and industrial effluent and pressures resulting from recreational activities.

Despite political commitments such as the Sustainable Development Goals[10], resource consumption and the demand for land, water and energy continue to increase. The extraction of natural resources is expected to double between 2015 and 2060[11]. This expansion is likely to occur at the expense of natural ecosystems, including marine ecosystems, threatening the achievement of key sustainability goals in Europe.

At the same time, the growing scarcity of natural resources and the increasingly visible environmental costs of production and use are a driving force for the search for alternatives. Changing behaviours, technological developments and recycling are influencing the demand, supply and availability of resources. A shift towards a more circular economy is expected to further enhance awareness and the development and exploitation of new approaches to sourcing and using resources[12].

Emerging drivers of change

The COVID-19 pandemic has led to a sharp drop in economic activities: in 2020 the EU recorded a real decrease in GDP of 6.1%[13]. It is expected that the EU blue economy will be more affected by the crisis than the overall EU economy, partly due to the importance of coastal tourism, which is highly sensitive to fluctuations in economic prosperity. Preliminary estimates show that coastal tourism declined almost by half in 2020, being one of the economic activities hit harder in the whole economy[14].

In 2020, the European Union provided an unprecedented response to the COVID-19 pandemic with a stimulus package worth EUR 2.018 trillion[15], thanks to the adoption of the NextGenerationEU[16], a temporary financing instrument aimed at economic recovery. Alongside the economic and social aspects of the funding package, there are significant elements targeting research and innovation, via Horizon Europe, and fair climate and digital transitions. The plans aim to modernise traditional policies, fight climate change and tackle the issue of biodiversity protection. This is seen as a significant opportunity to change policies and outcomes.

The war in Ukraine will likely continue to have negative impacts on economic growth, financial markets, and commodity prices. The crisis has already resulted in considerable economic and financial shocks, with the prices of oil, gas and wheat increasing, leading to trade restriction and supply chain bottlenecks that impact the EU blue economy. The impact on the different blue economy sectors and their capacity to recover will depend on the extent and duration of the conflict[17].

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[8] The world population has risen dramatically, from 3.03 billion in 1960 to about 7.79 billion in 2020, and it is projected to rise further reaching 8.55 billion in 2030 and growing past 10 billion by 2100. Demographic Outlook for the European Union (europa.eu) It is projected that the EU-27 population will continue to grow, even though more slowly than in the past, peak in 2044 at 525 million, before declining to 416.6 million by 2100.

[9] World Urbanization Prospects - Population Division - United Nations

[10] Drivers of change of relevance for Europe's environment and sustainability. Drivers of change of relevance for Europe's environment and sustainability — European Environment Agency (europa.eu)

[11] Aggravating resource scarcity | Knowledge for policy (europa.eu)

12 Aggravating resource scarcity | Knowledge for policy (europa.eu)

[13] The Gross Domestic Product of the EU-27 was estimated at EUR 14.015 billion and employment at 193.6 million people in 2019. The contribution of the Blue Economy sectors was 1.5% in terms of GVA and 2.3% in terms of employment.

[14] The EU Blue Economy Report 2022. 2022-blue-economy-report_en.pdf (medblueconomyplatform.org)

[15] The EU budget of EUR 1.211 trillion, plus the EUR 806.9 billion for NextGenerationEU https://ec.europa.eu/info/strategy/recovery-plan-europe_en

[16] Council Regulation EU 2020/2094

[17] The EU Blue Economy Report 2022. 2022-blue-economy-report_en.pdf (medblueconomyplatform.org)

Climate change

Continued unabated, anthropogenic pollution and GHG emission will further increase changing climate patterns[18]. Global temperature will continue to increase in the future, depending on CO^2 emissions[19]. As a response to climate change, the European Commission has adopted the European Climate Law, which sets a legally binding target of net zero gas emissions by 2050[20].

Developments in international cooperation

On 17 June 2022, a WTO agreement on fisheries subsidies21 was adopted with the aim to eliminate subsidies that contribute to Illegal, Unreported and Unregulated (IUU) fishing, overfishing and fishing in the unregulated high seas. For the agreement to become operational, two-thirds of WTO members now have to deposit their "instruments of acceptance" with the WTO. In order to protect the Biodiversity Beyond National Jurisdiction (BBNJ), five sessions of an intergovernmental conference to develop an international legally binding instrument on marine BBNJ took place from 2018 to 2022 under the auspice of the United Nations (UN). The last meeting in August 2022 failed to reach an agreement. A new meeting is expected by the end of 2022.

At regional level, four European Regional Sea Conventions (RSCs) to protect the marine environment - OSPAR, HELCOM, the Barcelona Convention and the Bucharest Convention - have been in place for many decades[22]. to protect the marine environment.

In the Mediterranean, the Regional Plan on Marine Litter Management in the Mediterranean is a legally binding instrument that sets specific measures and operational targets to achieve Good Environmental Status (GES). It includes a basin-wide marine litter reduction target of 20% of beach litter by 2024[23]. A 2020 report[24] confirmed that progress has been made. However, these results have not been sufficient to reduce the most significant pressures and to achieve GES.

In the Baltic Sea, a number of environmental improvements have been noticed since the adoption of the BSAP by HELCOM Contracting Parties in 2007[25]. The BSAP is further backed by the HELCOM Nutrient Reduction Scheme[26]. Agreed upon actions under the BSAP show varying implementation status, with about 33% of the joint regional actions and 7% of the national actions being reported as fully implemented by all HELCOM Contracting Parties as of 1 September 2022[27]. It is expected that the implementation of the BSAP actions will show progress over the next few years.

The OSPAR Convention is supported by the North-East Atlantic Environment Strategy (NEAES 2030), which was adopted on 1 October 2021[28]. The review indicates the level of achievement of the objectives set by the strategy, such as the Marine Protected Area (MPA) coverage (6.5% of the OSPAR maritime area as of 2020) and the reduction of marine litter (as stipulated under the Regional Action Plan on Marine Litter that has been revised in 2022).

In the Black Sea, the Black Sea Strategic Action Plan[29] (last updated in 2009) has identified and aims to deal with four priority transboundary problems being: eutrophication/nutrient enrichment; changes in marine living resources; chemical pollution (including oil); and biodiversity/habitat changes, including alien species introduction.

[18] Climate change and environmental degradation | Knowledge for policy (europa.eu)
[19] Climate Change 2021. The physical Science Base. Summary for policymakers IPCC_AR6_WGI_SPM_final.pdf
[20] European Climate Law Publications Office (europa.eu)
[21] WTO | Agreement on Fisheries Subsidies (Last viewed on 26/09/2022)
[22] https://ec.europa.eu/environment/marine/international-cooperation/regional-sea-conventions/index_en.htm
[23] Barcelona Convention and Protocols | UNEPMAP (Last viewed on 21/09/2022)
[24] United Nations Environment Programme/Mediterranean Action Plan and Plan Bleu, 2020. State of the Environment and Development in the Mediterranean: Summary for Decision Makers. Nairobi. SoED_Summary.pdf (planbleu.org)
[25] Baltic Sea Action Plan – HELCOM (Last viewed on 21/09/2022)
[26] Nutrient input reduction scheme – HELCOM (Last viewed on 21/09/2022)
[27] Follow Up of HELCOM Agreements – HELCOM (Last viewed on 21/09/2022)
[28] OSPAR, 2021. High-level, medium-level, and detailed-level evaluation of progress against OSPAR's North-East Atlantic Environment Strategy 2010-2020. documents (ospar.org)
[29] Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea, 2009. Microsoft Word - SAP2009_ver_09Apr09.doc (europa.eu)

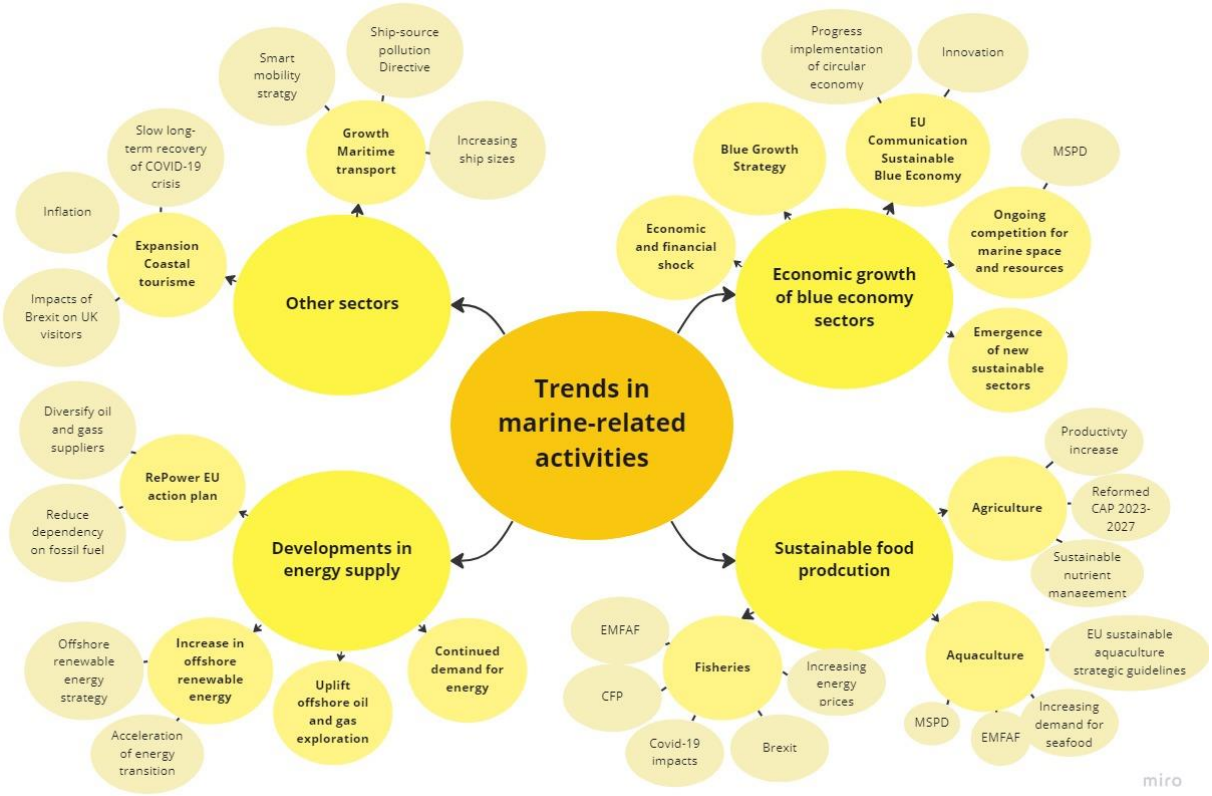
4 TRENDS IN MARINE-RELATED ACTIVITIES

Questions to workshop participants on trends in marine-related activities

Q4. Which key **sectoral developments**, **policies and innovations** will drive or mitigate pressures on the marine environment? In particular: which sectors will see their pressures on marine ecosystems significantly reduced – and why? To the contrary, which sectors will see their pressures on marine ecosystems significantly increased – and why?

Drivers of change will have an impact on economic sectors that encompass many activities related to the marine environment, including sea-based blue economy sectors (fishing, marine transport, etc.), and also land-based sectors (e.g. agriculture, industry, coastal tourism). The dynamic baseline scenario describes how the drivers of change and sectoral policies affect marine related economic sectors. Figure 2 provides an overview of key trends in marine-related activities of relevance for the achievement of MSFD objectives.

Figure 2: Summary of trends in marine-related activities



Growth of blue economy sectors

Supported by the 2012 Blue Growth Strategy[30], blue economy sectors are (partly) driven by goals of growth and employment. According to the 2022 EU Blue economy report[31], the traditional sectors of blue economy provide 4.5 million direct jobs and generate over EUR 650 billion in turnover. As discussed above, both the outbreak of the COVID-19 pandemic and the war in Ukraine have had major impacts on the EU economy, and it is estimated the EU blue economy will be relatively more affected

[30] Blue growth: opportunities for marine and maritime sustainable growth. LexUriServ.do (europa.eu)
[31] The EU Blue Economy Report 2022. 2022-blue-economy-report_en.pdf (medblueconomyplatform.org)

by the crisis than the overall EU economy. So far, the crises have resulted in economic and financial shocks, predominantly affecting commodity prices (inflation), supply chain bottlenecks, an energy crisis and trade restrictions. Nevertheless, the EU blue economy is expected to recover offering important investment opportunities.

The growth of the EU's blue economy is leading to increased competition for marine space and resources. The Maritime Spatial Planning (MSP) Directive[32] was adopted in 2014, with the aim of promoting sustainable development in marine areas, but to date progress has been mixed[33]. Going forward the Commission has committed to supporting better implementation of the Directive, through policy dialogue across the EU, monitoring and where necessary bringing infringements in cases where Member States do not adopt plans[34].

The EU Communication on a Sustainable Blue Economy[35] was published in May 2021, replacing the 2012 Blue Growth Strategy, aiming to expand sustainable, climate proof activities to the maritime economy. Traditional sectors such as tourism, fisheries, port activities, maritime transport and shipbuilding are looking to innovate to ensure a successful transition to a sustainable economy alongside developing sectors such as offshore windfarms, aquaculture and the new sectors such as wave and tidal energy or algae production.

To direct investments towards sustainable projects and activities, the Commission Action Plan on Financing Sustainable Growth[36] sets out a strategy to further connect finance with sustainability. The action plan includes the EU Taxonomy: a clear and detailed system for classifying sustainable activities to provide companies, investors and policymakers with appropriate information on whether economic activities can be considered environmentally sustainable[37]. The so-called Taxonomy Regulation establishes six environmental objectives, including the sustainable use and protection of water and marine resources. The Taxonomy aims to channel investments towards the greening of economic activities, the scaling up of nature-based solutions and the restoration of degraded marine ecosystems.

Research and Innovation

Research and Innovation drives the transition to a sustainable blue economy through scientific evidence and innovative solutions. A new European Research Area (ERA)[38] strategy was adopted in 2020, prioritising investments and reforms in research and innovation towards a green and digital transition and accelerating the transition in sectors[39].

Horizon Europe for 2021-2027 is the EU's key funding programme for research and innovation addressing climate change, contributing to the achievement of the UN SDGs and boosting the EU's competitiveness and growth[40]. Underneath the Horizon programme the EU has launched five mission areas, including one on "Healthy oceans, seas, and coastal inland waters". The mission's board has proposed 'Mission Starfish 2030: Restore our ocean and Waters'[41], which aims to protect and restore marine and freshwater ecosystems and biodiversity, prevent and eliminate pollution, and make the sustainable blue economy carbon-neutral and circular. One of the Mission's targets is to streamline marine and freshwater observation and guarantee access to all via a digital twin of the ocean and all waters. The digital twin aims to fully map, sequence, observe and predict the ocean, seas, and rivers.

[32] Directive 2014/89/EU <P (europa.eu)
[33] Report from the Commission to the European Parliament and the Council outlining the progress made in implementing Directive 2014/89/EU establishing a framework for maritime spatial planning
[34] Q&A : MSP progress report (europa.eu)
[35] Communication on a new approach for a sustainable flue economy in the EU transforming the EU's Blue Economy for a sustainable future. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0240&from=EN
[36] EC, 2018. Action Plan: Financing Sustainable Growth. SF AP FINAL FINAL (europa.eu)
[37] Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852&from=EN
[38] EC, 2020. A new ERA for Research and Innovation. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0628&from=EN
[39] EC, 2021. European Research Area Policy Agenda – Overview of actions for the period 2022-20214. European Research Area Policy Agenda (europa.eu)
[40] EC, 2021. Horizon Europe. The EU research and innovation programme 2021-2027. ec_rtd_he-investing-to-shape-our-future_0.pdf
[41] EC, 2020. Mission Starfish 2030: Restore our Ocean and Waters. Mission Starfish 2030 - Publications Office of the EU (europa.eu)

The work is part of the Digital Europe Programme (DIGITAL)[42] related to Destination Earth[43] and its development of digital earth twins.

Between 2022 and 2025 the Mission will roll out "lighthouses", which will act as hubs and platforms for the development, demonstration and deployment of solutions. Four Mission lighthouses have been set up: Atlantic-Arctic, Baltic-North Sea, Mediterranean and Danube[44,45]. In the deployment and upscaling phase (2026-2030), the solutions will be scaled up enabling broad implementation and participation in Europe and its bordering basins. The Mission will mobilise a range of European instruments to finance research and innovation, including the European Maritime Fisheries and Aquaculture Fund (EMFF), InvestEU, NextGeneration EU, the LIFE programme, European Regional Development Fund, Cohesion Fund, the programme for Competitiveness of small and medium-sized enterprises, BlueInvest, Innovation Fund, Modernisation Fund, and Renewable Energy Financing mechanism.

Harmonised marine data are fundamental to advance research and innovation. The European Marine Observation and Data Network (EMODnet)[46] is a network of organisation supported that work together to observe the sea, process the data according to international standards and make the information freely available. There are also a number of initiatives in the context of the European Research Infrastructure Consortium[47] (ERIC) that provide products and services to study the marine environment such as: the Jericho Research infrastructure which provides a pan-European multidisciplinary and multi-platform research infrastructure[48], Euro-Argo that provides autonomous floats to collect data[49], the European Multidisciplinary Seafloor and water column Observatory (EMSO)[50] that links multidisciplinary seafloor and column observatories, and finally the European Marine Biological Resource Centre (EMBRC)[51] focusing on biology and ecology. Other initiatives include the All-Atlantic Ocean Research Alliance[52], Copernicus Marine Service[53], Copernicus Climate Change Service[54]

Sustainable food production

The EU Agricultural Outlook shows that, by 2030, the total EU agricultural area is projected to decrease slightly, while the value of EU agricultural production is expected to increase[55]. The reformed Common Agricultural Policy (CAP) 2023-2027[56] includes additional measures to promote a more sustainable nutrient management[57]. With the implementation of the reformed CAP the area dedicated to organic production is expected to increase, assuming the demand for organic products will continue to grow. Successful implementation of the reformed CAP is strongly conditioned by the effective allocation of funds to reward farmers for adopting sustainable practises protecting land and water quality by limiting the usage of chemicals and nutrients. EU Member States are free to design their national strategic plans, which poses the risk of maintaining the status quo. Despite these efforts, nutrient surpluses from agriculture will prove persistent contributing to nutrient pollution and eutrophication of the seas and oceans.

[42] EC, 2021. Regulation EU 2021/694. Establishing the Digital Europe Programme and repealing Decision EU 2012/2240. Publications Office (europa.eu)
[43] Destination Earth | Shaping Europe's digital future (europa.eu)
[44] EC, 2022. Restore our Oceans and Waters by 2030 – What's in it for me? Restore our ocean and waters by 2030 - Publications Office of the EU (europa.eu)
[45] EC, 2022. Restore our Ocean and Waters – A synergy info pack by CORDIS. Restore our ocean and waters - Publications Office of the EU (europa.eu)
[46] What is EMODnet? | European Marine Observation and Data Network (EMODnet) (europa.eu)
[47] ERIC (europa.eu)
[48] Home – Français | JERICO Research Infrastructure (jerico-ri.eu)
[49] Euro-Argo in brief - Euro-Argo ERIC
[50] What is EMSO – EMSO
[51] European Marine Biological Resource Centre | EMBRC
[52] AANCHOR - Our Focus (allatlanticocean.org)
[53] Home | CMEMS (copernicus.eu)
[54] Homepage | Copernicus
[55] EU Agricultural Outlook. For markets, income and environment 2021-2031. agricultural-outlook-2021-report_en_0 (2).pdf
[56] Regulation EU No 1306/2013 Publications Office (europa.eu), Regulation EU No 2021/2115 Publications Office (europa.eu), Regulation E2013U No, Regulation EU No 2021/2117 Publications Office (europa.eu)
[57] A share of the budget (25%) is allocated to the green-echo schemes designed by the countries to meet the environmental objectives (eg. organic farming, agro-ecology…).

The EU is sixth in the world regarding fishery and aquaculture products and has been stable over the past 10 years. Capture fisheries have increased over the last decade and may have the capacity to do so further, in partly due to the improved status of fish stocks and increased fishing opportunities. The COVID-19 pandemic had a significant effect on EU fishing fleets, mainly seen in a reduction in landings and fishing efforts. Since March 2022, oil prices have increased sharply as a result of the war in Ukraine. In addition, fishing activities are going to be significantly affected by Brexit as the EU fishing fleet will have its fishing rights in UK waters reduced by 25% until 2026. These developments will have a significant impact on the economic performance of the sector.

European fisheries have made considerable efforts to bring fish stocks back to sustainable levels and to meet the Common Fisheries Policy's (CFP)[58] sustainability standards[59]. In 2021, fisheries in the EU continued growing in sustainability, but further efforts are needed to continue pursuing stock recovery, notably in the Baltic Seas and Mediterranean Seas. The Commission is currently preparing an Action Plan to conserve fisheries resources and protect marine ecosystems[60]. At the same time, some sources consider that the new European Maritime, Fisheries and Aquaculture Fund[61] (EMFAF) 2021-2027 supporting the implementation of the CFP is still financing overcapacity and overfishing[62].

Aquaculture has an important role to play in helping to build a sustainable food system. EU aquaculture has stagnated over the last decades even if its value has increased. The EMFAF that supports aquaculture, Maritime Spatial Plans at Member State level and the EU sustainable aquaculture strategic guidelines[63] should give the opportunity to boost the EU aquaculture production. Considering the increasing demand of seafood products and the opportunity to establish new farms partly due to Maritime Spatial Planning (MSP) it is expected that the sector will grow the coming years.

Energy supply

The current demand for energy from industry and individuals is high. It is expected that the EU's energy consumption will shrink by 2050 despite an increase in GDP, meaning that the energy intensity of the EU economy would reduce by nearly half over this period[64]. While 80% of the current European oil and gas production takes place offshore, offshore production has been in decline for some years[65]. As the EU has resolved to rapidly decrease its dependency on Russian oil and gas, both an increase in offshore oil and gas exploration in European seas and beyond and to an acceleration of the transition to renewable energy sources as presented in the RePowerEU action plan[66,67] can be expected.

The goal of climate neutrality will also drive the development of offshore renewable energy. The European Commission Offshore Renewable Energy Strategy[68] was published in November 2020 and outlines ambitions to deploy 300 GW of offshore wind energy by 2050, complemented by 40 GW of ocean energy and other emerging technologies such as floating wind and solar.[69] The increase in offshore

[58] Common Agricultural Policy. Regulation EU No 1380. Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC (europa.eu)

[59] The current CFP entered into force in 2014 and set objectives for 2020. It encompasses two components: 1. the sustainable management of fisheries stocks (for example, annual quotas for all fishing stocks and technical measures on fishing gears) and 2. structural measures to support fisheries and aquaculture (for example vessel capacity adaptation).

[60] Towards more sustainable fishing in the EU: state of play and orientations for 2023. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0253&from=EN

[61] Regulation EU No 2021/1139. Publications Office (europa.eu)

[62] Report from an NGO coalition: Common Fisheries Policy: Mission not yet accomplished (June 2021)

[63] Strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030. resource.html (europa.eu)

[64] The POTEnCIA Central scenario. An EU energy outlook to 2050. JRC Publications Repository - The POTEnCIA Central scenario: an EU energy outlook to 2050 (europa.eu)

[65] The EU Blue Economy Report 2022. 2022-blue-economy-report_en.pdf (medblueconomyplatform.org)

[66] REPower EU Plan . https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022SC0230&from=EN

[67] The EU Blue Economy Report 2022. 2022-blue-economy-report_en.pdf (medblueconomyplatform.org)

[68] An EU Strategy to harness the potential off offshore renewable energy for a climate neutral future. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0741&from=EN

[69] Other initiatives supporting the transition to climate neutral energy production include the European Masterplan for a competitive transformation of the EU energy intensive industries, enabling a climate neutral circular economy by 2050 aims to ensure that the transition is done without disruption to the economy. Relevant work includes the Strategic Forum on Important Projects of Common European Interest and its work on strategic value chains, the Strategic Plan for Horizon Europe, the Technical Expert Group on sustainable finance, the Roundtable on Industry 2030 and the Integrated National Energy and Climate Plans.

gas and oil exploration, the installation of offshore windfarms and the continued rise in extraction of other minerals from seabed mining continues to be on the rise[70], will continue to put pressure on marine ecosystems, including habitat disturbance and degradation, disruptions of seabed integrity, hydrographical changes and increased underwater noise. Offshore based mining and extraction is also a main source of marine litter.

Other blue economy sectors

EU maritime transport was also hit by the COVID-19 pandemic in 2020, decreasing by 45% compared to 2019. International shipping is expected to grow during the next few decades in terms of transport volumes, leading to an increase in ship sizes. Maritime transport exerts pressures on the marine environment related to greenhouse gas emissions and sulphur dioxide emissions, marine litter, oil-spill risks, underwater noise and is responsible for the introduction of half of all non-indigenous species[71].

In recent years, the maritime transport sector has taken significant measures to alleviate its environmental impacts and has made efforts to decarbonize the sector. The EU has contributed and will continue to contribute to these efforts through the Smart Mobility Strategy[72], which aims to achieve a 90% reduction in transport emissions by 2050 and the Ship-source pollution Directive[73] aiming to support protection of the marine environment from pollution by ships including marine litter. While some progress can be expected in response to these ongoing initiatives, maritime transport will nonetheless continue to put pressure on the marine environment.

Coastal tourism was the sector most impacted by the COVID-19 pandemic, due to travel restrictions, with a reduction of its turnover almost by half. A slow and long-term recovery is expected. Despite the uncertainties caused the COVID-19 crisis, the impact of the Brexit on visits from the UK, and inflation, it can be expected that coastal tourism will continue to expand. The expected growth will increase pressure on the marine environment in coastal areas, mainly in the form of marine litter.

5 THE EUROPEAN RESPONSE

Questions to workshop participants on the European response

Q5. What can we expect the **MSFD implementation** to deliver in coming years? Which bottlenecks will continue to hamper its implementation? Which developments and innovations are expected to speed up implementation and the delivery of GES?

Q6. Which (existing, revise or new) **environmental policies** will (continue to) support to the implementation of the MSFD and need to be considered in the dynamic baseline scenario? Which ones will be key in terms of their expected impacts on reducing pressures and delivering GES?

The state of the ocean and marine environment are affected by various pressures resulting from driving forces and activities, many of which are regulated by EU strategies. The objectives and targets of EU strategies will be implemented via legislative measures, the creation of new policies and the alignment of existing ones. This section presents the European response to drivers and activities impacting the marine environment, including the MSFD as well as other strategies, policies and initiatives exist aiming to address marine ecosystem change and broader marine environmental challenges.

Progress in the implementation of the Marine Strategy Framework Directive

Since the adoption of the MSFD in 2008, an integrated EU-level framework has been put in place for

[70] The EU Blue Economy Report 2022. 2022-blue-economy-report_en.pdf (medblueconomyplatform.org)
[71] European Maritime Transport Environmental Report 2021. European Maritime Transport Environmental Report 2021 — European Environment Agency (europa.eu)
[72] Sustainable and Smart Mobility Strategy. Mobility Strategy (europa.eu)
[73] 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).

protection and preservation of the marine environment and thereby to achieve or maintain Good Environmental Status (GES) of the EU marine environment. The integrated approach consists of five process-based objectives: 1) the development of marine strategies in line with an ecosystem-based approach (EBA), 2) marine data collection and better knowledge, 3) regional cooperation, 4) integration of EBA, and 5) coherence with other legislation. The dynamic baseline will need to describe how factors determining progress on achieving these objectives are expected to evolve (in the absence of policy changes).

Development and implementation of marine strategies

While there have been significant improvements in marine strategies between the 1st and 2nd reporting cycle, complexity of the legislation still hinders the development of marine strategies, including the lack of clarity on key definitions and concepts, clear and harmonised objectives, operational targets and difficulties in defining, quantifying and monitoring GES. Some improvements are to be expected thanks to the coordination work and guidance on threshold values of the Common Implementation Strategy and RSCs. But as GES determination remains at Member State level and consequently an agreed harmonised objective of GES remains missing, the main gaps are expected to persist: determining GES, setting environmental targets and threshold values, and status assessment.

There has been progress on the establishment of monitoring networks and their coherence across regions to meet the requirements of the MSFD. Despite progress, monitoring programmes only partially cover monitoring needs to measure progress towards achieving GES and targets and regional differences exist in coherence for some aspects of the monitoring programs. The main gaps are related to lack of knowledge or lack of methodological standards (targets and threshold values) for descriptors that are not covered by existing legislation (non-indigenous species, hydrographical changes, marine litter, underwater noise).

While efforts to develop and apply regionally agreed and harmonized monitoring standards in the framework of the RSCs will continue, the absence of clear overarching objectives and targets that guide monitoring will continue to hamper monitoring progress towards achieving GES. Monitoring of the effectiveness of measures to mitigate pressures and their impacts will remain in particular a challenge for Member States.

For their marine strategies Member States have relied heavily on existing regulatory frameworks to provide measures. The degree of implementation of new measures is low and delayed due to financing, national implementation mechanisms and technical issues related to proper monitoring data. In absence of stricter implementation enforcement, increased political will and adequate financial support, these issues will continue to exist in the future and modest progress on the implementation of new measures is to be expected.

Marine data collection and better knowledge

The MSFD has generated vast quantities of data and knowledge through its monitoring and reporting obligations and in joint research projects at EU and regional level. It has also ensured that Member States collect data in areas where there was previously very little knowledge (for example, underwater noise and marine litter), creating new research opportunities. Despite the success in data collection and knowledge reported information by Member States is still insufficient (data gaps remain) to build a common and harmonized dataset, to compare data from different countries and to integrate knowledge at EU level.

Further progress in data collection will be achieved thanks to ongoing monitoring efforts of Member states, progress in monitoring undertaken for other EU policies and multiple European initiatives to monitor or coordinate data collection such as EMODnet, the Copernicus Marine Service and the European Ocean Observation system. The challenge to establish bridges between these initiatives and to agree on a common approach on how to make use of them (without clear objectives and targets) will persist despite efforts from CIS, RSCs and EMODnet to develop robust methodologies for publishing and comparing data in line with the INSPIRE Directive.

Regional cooperation

Regional cooperation increased after the MSFD came into force through the use of pre-existing Regional Sea Conventions and joint research projects funded at EU level. The MSFD implementation has benefited from the existing cooperation between Member States and has contributed to regional cooperation through developing guidance and monitoring programmes. Several barriers to regional cooperation exist today, which are dominance of national interest, limited EU mechanisms for regional coordination, difficulties coordinating with third countries, and the extent to which Regional Sea Conventions are active. These barriers will continue to exist in the future if no further action is taken to improve regional cooperation and coordination. Consequently, it will remain difficult to develop coherent marine strategies.

Integration of an Ecosystem-based approach (EBA)

The EBA is an important component of the MSFD and one of its main achievements. Despite the MSFD being lauded as a successful example of EBA worldwide, it has not been fully applied in managing human activities due to difficulties to a lack of clarity of key definitions and concepts, especially concerning the links between EBA and achieving GES. In the future, some improvements in the use of the ecosystem-based approach are to be expected, but without clear definitions its application will remain restricted limiting policy coherence with other sectoral policies that also use the concept.

Coherence with other legislation

Successful implementation of the MSFD requires a high degree of cooperation and coordination across different policy fields as well as a shift in traditional governmental practice of managing sectoral activities individually. Insufficient coherence with other legislation relevant to the protection and management of the marine environment. Differences in definitions, targets, and data collection strategies across multiple EU policies are important factors hindering the development and implementation of marine strategies. Without further alignment of policies the lack of coherence will persist in the next implementation cycle.

Progress on the implementation of European environmental policies

The EU Green Deal[74] aims to transform the EU's economy for a sustainable future and is part of the European Commission's strategy to implement the United Nation's 2030 Agenda and the SDGs. It sets the roadmap for the next 10 years guiding the EU towards climate neutrality by 2050 and a more sustainable economy and society respecting resource boundaries. The Green Deal consists of various elements[75], three of which are directly relevant for marine ecosystems: 1. Preserving and restoring ecosystems (Biodiversity Strategy); 2. A fair, healthy and environmentally friendly food system (Farm to Fork Strategy); and 3. A zero-pollution ambition for a toxic free environment (Zero Pollution Action Plan).

The EU Biodiversity Strategy for 2030 was published in May 2020 (adopted mid-2021) and is a core part of the EU Green deal, aiming at protecting and restoring biodiversity. The strategy aims at legally protecting a minimum of 30% of the EU's sea area through Marine Protected Areas (MPAs) including 10% strictly protected or no-take zones, to strengthen the EU legal framework for nature restoration, to restore marine ecosystems, and to reduce pollution. The Biodiversity Strategy sets tangible targets for the reduction of the overall use of chemical pesticides by 50%, to increase organic farming and to reduce the losses of nutrients from fertilisers by 50% (resulting in the use of fertilisers by at least 20%), thereby contributing to the reduction of pollution of inland waters and oceans. Marine ecosystems are to be restored by substantially reducing negative impacts of fishing and extraction activities and the elimination and reduction of by-catch of species.

Besides blue economy sectors, the European agricultural sector (farming and fishing) is key to manage the transition. The Farm to Fork Strategy was launched in May 2020 aiming at transitioning food systems over the full chain in agriculture and fisheries towards more sustainability and reducing the

[74] The European Green Deal. EU_Green_Deal.pdf (epc.eu)

[75] Elements of the Green Deal: Increasing the EU's climate ambition for 2030 and 2050, Supplying clean, affordable and secure energy, Mobilizing industry for a clean and circular economy, Building and renovating in an energy and resource efficient way, Accelerating the shift to sustainable and smart mobility

impacts of food production on biodiversity and climate. It promotes farming and fishing methods that favour biodiversity and thus mirror many objectives of the Biodiversity Strategy (e.g. organic farming coverage, diversity of crops, reducing pesticides, antimicrobials and fertilisers use) and it sets a framework for aquaculture and fisheries products using alternative food and feed (e.g. algae, cell-based seafood) and strengthening fisheries management.

To protect aquatic and marine ecosystems from pollution, interlinked challenges should be addressed considering all existing policies and regulations in coherence. The Zero Pollution Action (ZPA)[76] Plan was adopted in 2021 for this purpose and presents a zero-pollution vision for 2050 translated into key targets for 2030: air pollution by 55%, waste and plastic litter at sea by 50%, microplastics by 30%, nutrient losses/pesticides by 50%, residual urban waste by 50%.

While the European Green Deal initiatives are clear in their ambitions and presents a plan to secure financing, to mobilise research, foster innovation, create commitment and involve the public, there is a risk that the level of ambition will not be met with needed actions across EU Member States. Given the past trend and current status, it is unlikely that 2030 targets will be reached. For example, at year-end 2020, 11% of EU seas were covered by MPAs but strictly protected areas are almost absent (c. 0.1% area[77]). Only c.2% of the EU marine area have management plans in place and nearly 90% of all European MPAs are not managed effectively[78]. Although there may be some differences between sea basins – e.g. the Baltic Sea seems more advanced showing a higher MPA coverage at 16.5% vs 12% for the Mediterranean and 10% for the Northeast Atlantic.

The ZPA Plan, Biodiversity Strategy and Farm to Fork Strategy are not binding (no time-bound legal obligations exist) and targets remain voluntary. However, the strategies will gain binding power through the ongoing implementation of targets and objectives set in the strategies and could eventually be transposed into legally binding directives or laws such as the proposal for the Nature Restoration law.[79] The objectives and targets set out in the strategies mentioned above will be accompanied by concrete support measures. In the future a great number of policies and will be implemented and revised:

Direct compliance costs

- The Water Framework Directive[80] is the key regulation aiming to ensure good ecological status of surface and groundwater by 2020. The WFD has been successful in setting up a governance framework for integrated water management, slowing down the deterioration of water status[81]. The Directive's implementation has been delayed and the deadline has been extended to 2027 for the 3rd cycle. Nearly 60% of surface waters were not in a good ecological status in 2020. The fact that the WFD's objectives have not been reached fully yet is largely due to insufficient funding, slow implementation, and insufficient integration of environmental objectives in sectoral policies. The current distance to be covered to full compliance with the WFD objectives for 2027 is still considerable without drastic changes to measures in place. Member States are urged to accelerate action in their third River Basin Management plans. Progress will be made, but there is a risk for not achieving Good Ecological Status for all water bodies by 2027. There will be a need to further improve the status of water bodies after 2027, but it is still unclear what will be beyond the 2027 deadline for achieving WFD objectives[82]. Without a perspective for post-2027, Member States are likely to apply less stringent environmental objectives for water bodies where it has been proven technically or financially impossible to implement the necessary measure to achieve good ecological status.

[76] Pathway to a Healthy Planet for All EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil'. resource.html (europa.eu)
[77] EEA report: Europe's marine protected area networks for 2030 - baseline and targets– December 2021
[78] WWF report: PROTECTING OUR OCEAN EUROPE'S CHALLENGES TO MEET THE 2020 DEADLINES - 2019
[79] The European Green Deal: How to turn ambition into action. EU_Green_Deal.pdf (epc.eu)
[80] Water Framework Directive (WFD) 2000/60/EC: 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.
[81] EC, (2019). Fitness check evaluation of the Water Framework Directive and the Floods Directive. Final evaluation report. Study report FC WFD and FD_Final report_TRI _TEC6327EU.pdf (europa.eu)
[82] EC, (2018). The future of the Water Framework Directive (WFD) – Water Directors input to the fitness check process on experiences and challenges of WFD's implementation and options for the way forward. WD2018-2_Session 2_Consultation Group.pdf (europa.eu)

- Other water-related directives, such as the Nitrates Directive, the Urban Waste Water Treatment Directive and the EQS Directive contribute to WFD objectives and make important contributions to the MSFD. Progress on implementation has been achieved since their adoption. For example, the implementation and enforcement of the Nitrates Directive has cut off nutrient losses from agriculture over the last 30 years. And, since the implementation of the Urban Waste Water Treatment Directive, significant progress has been made on collecting and treating waste waters, thereby contributing to protecting the environment from adverse effects of discharges of urban and (biodegradable) industrial waste water.
- The Single Use Plastics (SUP) Directive establishes targets and measures to reduce the impact of certain plastic products, including plastic fishing gear, on the marine environment (e.g. bans of specific SUPs, consumption reduction measures, extended producer responsibility schemes). and it is expected that even the next reporting of Article 8 may show improvements to the physical environment, especially around beaches where such products are commonly found. However, there is concern83 the Directive won't be sufficient to mitigate marine litter, either due to the limited scope of the Directive or due to imperfect implementation by manufacturers. Other (in particular) international agreements will likely reduce the impacts from third countries on EU MSs although it is possible that implementing the obligations may take some time, and it may be some years before the impacts are evident in the EU.
- A Nature Restoration Law (NRL) was proposed in mid-2022, with binding targets to restore degraded ecosystems with high potential to capture and store carbon. It aims to safeguard 20 % of Europe's nature by 2030, and all necessary ecosystems by 2050. For the marine environment, these include seagrass beds, sediment bottoms that deliver ecosystems services, and other habitats home to several key species, such as dolphins and porpoises, sharks and seabirds, and spawning and nursery habitats of commercial fish. The NRL proposal sets out restoration measures to improve areas of habitat types to good condition: at least 30 % of the area of each group of habitat types by 2030, at least 60 % by 2040, and at least 90 % by 2050. These challenging targets for the near future have been questioned with regard to the designation of key biodiversity areas. Nevertheless, the NRL is expected to drive action to improve habitats, and thus encourage biodiversity.
- The Action Plan to conserve fisheries resources and protect marine ecosystems (postponed from 2021) will address adverse impacts on sensitive habitats through technical measures such as area closures, gear changes and mitigation measures for sensitive species. It will affect both commercial species and by-catch. Bottom-trawling fisheries, in particular, will be managed through closures, technological advances and mitigation measures.

Other policies that are linked to the MSFD are: the Habitats Directive, the Birds Directive, The Port Reception Facilities Directive, the Packaging Waste Directive, the European Strategy for Plastics in a Circular Economy, the Circular Economy Action Plan, the EU Strategy for sustainable and circular textiles, the Renewable Energy Directive, the Landfill Directive, the Eco-design Directive, the Drinking Water Directive, the EU´s Water reuse and Food Protection/Safety policies, the Prospection, Exploration, and Production of Hydrocarbon Directive, the EU Regulation on the Sustainable Management of External Fishing Fleets, the Regulation on Invasive Species, the Deep Sea Access Regulation, the Raw Materials Initiative, the EU Chemical Strategy for Sustainability, the Environmental Impact Assessment Directive and the Strategic Environmental Impact Assessment (SEI) Directive.

6 PUTTING THE BUILDING BLOCKS OF THE DYNAMIC BASELINE TOGETHER: AN ILLUSTRATION

The combination of driving forces, trends in marine-related activities and EU policy responses described in the previous sections will determine how pressures from human activities may affect the state of the marine environment which in turn can have impacts on society. To provide a complete picture of expected progress towards achieving GES, trends and implementation progress for policy initiatives of

[83] https://www.plasticsoupfoundation.org/en/single-use-plastics-directive/

relevance should be investigated for all 11 GES descriptors. As an example, the table below pulls together evidence for Descriptor 5 on eutrophication. Similar work should be done on all other Descriptors.

Table 1: Example baseline evidence for Descriptor 5 on eutrophication

Scale	Initiative	Objectives	Progress
Internatio nal	HELCOM	Baltic Sea Action Plan: i) Concentrations of nutrients close to natural levels; ii) Clear waters; iii) Natural level of algal blooms; iv) Natural distribution and occurrence of plants and animals; v) Natural oxygen levels.	Agreed upon actions under the BSAP show different implementation status, with about 33% of the joint regional actions and 7% of the national actions being reported as fully implemented by all HELCOM Contracting Parties as of 1 September 2022. It is expected that the implementation of the BSAP actions will show progress over the next few years.
	OSPAR	NEAES 2030. Tackle eutrophication by setting environmental targets: i) Implement a eutrophication assessment tool; ii) Determine the maximum inputs of nutrients for relevant assessment areas; iii) Identify and quantify relevant sources and agree on nutrient reduction needs for each CP; iv) Ensure that sufficient measures are taken to achieve the necessary input reductions; v) Ensure that nutrient reduction targets and measures are sufficient to avoid adverse eutrophication effects in a changing climate; vi) Develop and implement a regional approach to applying nature-based solutions to reinstate and safeguard the natural capacity of the ecosystem to sequester nutrients.	The Marine Protected Area (MPA) coverage represents 6.5% of the OSPAR maritime area as of 2020.
	Bucharest Convention	Black Sea Commission Strategic Plan: reduce eutrophication and ensure good water quality for human health, recreational use and aquatic biota.	
	Barcelona Convention	Ecological Objective 5: Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.	
EU strategies	European Grean Deal	Restore aquatic ecosystems and attain the goal of zero pollution by 2050	Not binding (no time-bound legal obligations exist) and targets remain voluntary. However, the strategies will gain binding power through the ongoing implementation of targets and objectives set in the strategies and could eventually be transposed into legally binding directives or laws such as the proposal for the Nature Restoration law.
	EU Biodiversity Strategy	Actions and commitments aim to reduce nutrient loss from fertilisers by 50 %, resulting in the reduction of fertiliser use by at least 20 %.	Not binding (no time-bound legal obligations exist) and targets remain voluntary. However, the strategies will gain binding power through the ongoing implementation of targets and objectives set in the strategies and could eventually be transposed into legally binding directives or laws such as the proposal for the Nature Restoration law. Nearly 60% of surface waters were not in a good ecological status in 2020. The WFD's objectives are not being achieved yet19, and the new deadline for achieving good status in all EU waters is 2027. The current distance to be covered to full compliance with the WFD objectives for 2027 is still considerable without drastic changes to measures in place. Member States are urged to accelerate action in their third River Basin Management plans. Progress will be made, but there is a risk for not achieving Good Ecological Status for all water bodies by 2027.
	Farm to Fork Strategy	Targets for water pollution from excessively applied nutrients, aiming to reduce nutrient losses by at least 50 % while maintaining soil fertility. This will reduce fertiliser use by at least 20 % by 2030.	
	Zero Pollution Action Plan	Targets, and key actions for 2021-2024 to complement other Green Deal initiatives, including a target of reducing nutrient losses by 2030.	
	Mission Starfish 2030	By 2025, the Mission aims to i) Identify EU agricultural subsidies subject to compliance with the rate of use of (in)organic fertilisers to reduce eutrophication; ii) 100 % of urban wastewater in designated coastal areas is subject to tertiary (advanced) treatment; iii) 100 % of wastewater in rural areas is collected and treated. By 2030 to ensure i) Losses of nutrients into the environment are reduced by at least 50 %; ii) the use of fertilisers is reduced by at least 20 %; iii) 100 % of urban wastewater is subject to tertiary (advanced) treatment; iv) All waste water from ships operating in European waters is delivered to treatment plants on land.	
EU Environ mental	Water Framework Directive	Achieve good ecological status by 2027.	

Scale	Initiative	Objectives	Progress
legislation			
	Nitrates Directive	Protect water quality by preventing nitrates from agricultural sources from polluting ground and surface waters and by promoting the use of good farming practices.	The implementation and enforcement of the Nitrates Directive have significantly reduced nutrient losses from agriculture over the last 30 years. However, water quality data show that the level of implementation and enforcement are still not sufficient to reach the objectives of the Directive.
	Urban Waste Water Treatment Directive	Protect the environment from domestic and a mixture of waste water and industrial discharges.	The UWWTD has seen significant progress in collecting and treating waste waters, with overall compliance of 83%. However, the distance to target remains significant and additional efforts are necessary to reach full compliance.
EU Sectoral policies	Reformed Agricultural Policy	Regulate sustainable food production, protecting nature and safeguarding biodiversity. The CAP includes financial support for environmentally friendly farming practices.	The new CAP was adopted in 2021 and will be put into place in January 2023. It is expected that decoupling agricultural subsidies from production will reduce the use of fertilisers on farms. Furthermore, a significant proportion of the CAP's budget will be devoted to eco-schemes. A range of agricultural practices has been suggested to improve on-farm nutrient management.