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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND
THE COUNCIL**

**assessing Member States' programmes of measures under the Marine Strategy
Framework Directive**

{SWD(2018) 393 final}

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Marine life and resources: a lifeline for our planet

The importance of the seas and oceans to the well-being of our planet is by now an undisputed fact. Human activities exert pressures¹ that affect marine life and their habitats and the essential functions of our oceans. Recent initiatives have raised awareness on the health and state of our seas and oceans. These include the adoption of Sustainable Development Goal 14² to conserve and sustainably use the oceans, seas and marine resources; the joint Communication on International Ocean Governance³; 'The Ocean Conference' on Sustainable Development Goal 14⁴; and the Our Ocean conference series, of which the most recent was hosted by the Union in October 2017⁵.

Over the past 6 years, EU Member States have been developing marine strategies to comply with the **Marine Strategy Framework Directive**⁶. The Directive requires them to assess the quality status of the marine environment, determine good environmental status, set appropriate environmental targets and draw up adequate monitoring programmes and implement measures to achieve the Directive's key goal of securing the 'good environmental status' of all EU marine waters by 2020. The concept of 'good environmental status' is defined by the Directive through descriptors⁷, such as conserving biodiversity or tackling anthropogenic pressures that include fisheries, seabed damage, marine litter and contaminants. A new Commission Decision⁸, in force since June 2017, requires Member States to abide by common criteria and methodological standards when defining the concept of 'good

¹ For a list of anthropogenic pressures, see 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, (OJ L 125, 18.5.2017, p. 27).

² <https://sustainabledevelopment.un.org/sdg14>.

³ Joint Communication on International ocean governance: an agenda for the future of our oceans, JOIN(2016)49 final.

⁴ <https://oceanconference.un.org/>.

⁵ <http://www.ourocean2017.org>.

⁶ 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), OJ L 164, 25.6.2008, p. 19-40.

⁷ The 11 qualitative descriptors are defined in Annex I of the Marine Strategy Framework Directive and further specified in Commission Decision 2017/848/EU. They include D1– Biodiversity, D2 — Non indigenous species (NIS), D3 — Commercial fish and shellfish, D4 — Food webs, D5 — Eutrophication, D6 — Sea-floor integrity, D7 — Hydrographical changes, D8 — Contaminants, D9 — Contaminants in seafood, D10 — Litter, D11 — Energy, including underwater noise. For the purpose of this report, the Biodiversity descriptors (D1, D4 and D6) have been grouped according to the main species groups and habitat types, as follows: birds, mammals and reptiles, fish and cephalopods, seabed habitats and water column habitats. This additional grouping results in a total of 13 descriptor categories. .

⁸ 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 (OJ L 125, 18.5.2017, p. 43). .

environmental status' in quantitative terms for the marine waters under their territorial competence. Importantly, the Marine Strategy Framework Directive explicitly requires Member States to work with their neighbours in each marine region or sub-region⁹.

This report builds on the Commission's 2014 and 2017 assessments of Member States' marine strategies¹⁰ and assesses the programmes of measures, which all Member States had to report to the Commission by 31 March 2016¹¹. Generally applicable guidance on modifications necessary to improve the coherence and effectiveness of their measures is included as a set of recommendations to Member States at the end of this assessment. Country specific recommendations are included in the staff working document accompanying this report¹².

Regretfully, only 6 Member States¹³ reported their national programme of measures on time. Thus, the Commission launched the appropriate infringement procedures. By the cut-off date of February 2017¹⁴, a total of 16 out of the 23 marine EU Member States¹⁵ had eventually reported their national programmes. Programmes submitted by the other 7 Member States¹⁶ beyond that cut-off date could not be assessed in time for this report.

The Commission's 2014 assessment had concluded that the definitions and targets linked to the 'good environmental status' goal¹⁷ varied considerably among the Member States. Therefore, the present assessment also looks at the extent to which Member States' measures allow for a better comparability of their efforts in tackling relevant pressures on the marine environment. It also assesses for each relevant descriptor to what extent Member States are likely to achieve good environmental status by 2020, as required by the Directive¹⁸.

Which measures have Member States so far taken to achieve good environmental status?

In their programmes of measures, Member States often present existing initiatives or ongoing policy implementation as measures. This, for example, includes actions taken under EU environmental legislation or other laws such as the Waste Framework Directive¹⁹, the Water Framework Directive²⁰, the Birds Directive²¹, the Habitats Directive²², the Urban Waste

⁹ Article 4 of Directive 2008/56/EC lists the relevant EU marine regions and subregions. The four EU marine regions are the Baltic Sea, North-east Atlantic Ocean, the Mediterranean Sea and the Black Sea.

¹⁰ COM(2014) 97 final and COM(2017)03 final.

¹¹ Article 16 of the Marine Strategy Framework Directive requires that the Commission assess programmes of measures.

¹² SWD(2018)393

¹³ Belgium, Germany, Portugal, the Netherlands, Sweden and the United Kingdom.

¹⁴ The Malta report was submitted in April 2017, but was included in this assessment as it required no translation. .

¹⁵ i.e. in addition to the 6 Member States mentioned above: Bulgaria, Cyprus, Finland, France, Ireland, Italy, Latvia, Malta, Poland and Spain.

¹⁶ Croatia, Denmark, Estonia, Greece, Lithuania, Romania and Slovenia.

¹⁷ As required under Articles 8 and 9 of the Marine Strategy Framework Directive, assessed in COM(2014) 97 final.

¹⁸ Article 1 of Directive 2008/56/EC, defining the subject matter.

¹⁹ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3).

²⁰ 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 (OJ L 327, 22.12.2000 p. 1).

Water Treatment Directive²³, or the Common Fisheries Policy Regulation²⁴. Existing international commitments, such as those under the International Maritime Organisation, have also been included in Member States' programmes. Additionally, Member States frequently refer to initiatives taken under the Regional Sea Conventions²⁵. It is positive to see Member States refer, in a few instances, to measures specifically agreed with neighbours within an EU marine region, notably through the relevant Regional Sea Conventions, or within a sub-region. Around 25 % of the measures have been defined as 'new' measures, meaning they were put into place specifically for the purposes of the Directive. It is also positive to see that, thanks to the Marine Strategy Framework Directive, Member States have progressively moved from a piecemeal approach to protecting the marine environment to a more strategic approach, by bringing together various work-strands²⁶.

Exceptions

The Directive also allows Member States, in well-defined circumstances, to apply **exceptions**²⁷ to the achievement in every aspect, or within the relevant timeline, of the envisaged environmental targets or good environmental status. Such well-defined circumstances include the fact that achieving such goals is related to action or inaction which is beyond their responsibility, force majeure events, or the fact that natural conditions do not allow for a timely improvement in the status of their marine waters. Eight²⁸ of the 16 Member States at stake report exceptions. Other Member States declare not having applied exceptions because gaps in knowledge and data do not allow them to conclude whether or not an exception is required at this stage of implementation.

Types of measures

Member States have mainly devised measures which, **through a legal or technical intervention, directly help to reduce the pressure** (referred to as 'direct measures' in Figure 1). These entail, for example, technical solutions (e.g. less noisy ship engines) or restrictions to the spatial scope of certain activities (e.g. through licensing procedures). However, some

²¹ Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (OJ L 20, 26.1.2010, p. 7).

²² Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

²³ Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment (OJ L 135, 30.5.1991, p. 40).

²⁴ 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 (OJ L 354, 28.12.2013, p. 22).

²⁵ Four Regional Sea Conventions cover EU marine waters: (1) The Convention on the Protection of the Marine Environment in the Baltic Sea Area (HELCOM); (2) The Convention for the Protection of the Marine Environment of the North-east Atlantic (OSPAR); (3) The Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean; (4) The Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention). The Union is a contracting party to the first three.

²⁶ Note that this report refers to but does not assess measures introduced via other legislative initiatives, such as the Water Framework Directive's river basin management plans. Conclusions in these instances are therefore only partial.

²⁷ Article 14 of the Marine Strategy Framework Directive.

²⁸ Cyprus, Finland, Latvia, Malta, the Netherlands, Poland, Sweden and the United Kingdom.

Member States have also reported measures which would **indirectly help to address the pressure** in question (referred to as ‘indirect measures’ in Figure 1). These include governance actions, awareness-raising or communication campaigns (e.g. to reduce littering). Where Member States do not have sufficient knowledge about a particular pressure (e.g. non-indigenous species, underwater noise), they have identified the need for further research to better inform future measures and/or put in place further monitoring. Such measures would have been more appropriately reported as part of their monitoring programmes²⁹.

In compliance with what is required by the Marine Strategy Framework Directive³⁰, all Member States report, in their programmes of measures, on the use of **spatial protection measures**. These are measures meant to create coherent and representative networks of marine protected areas, such as special areas of conservation in line with the Habitats Directive, special protection areas in line with the Birds Directives or other protected areas agreed within regional or international agreements. Such spatial measures were often reported in connection with fisheries, or the protection of certain habitats; they are dealt with in the relevant sections below and further described in the technical assessments³¹. While 2 Member States³² clearly list new marine protected areas, another 8³³ reported they were planning or designating new marine protected areas as measures. The overall coverage has increased significantly³⁴ through the Birds and Habitats legislation³⁵ and international conventions.

²⁹ Article 11 of the Marine Strategy Framework Directive.

³⁰ As required by Article 13(4) of the Marine Strategy Framework Directive.

³¹ The technical Member State-specific assessments were prepared for the Commission by an external consultant and are found at http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/implementation/reports_en.htm

³² Portugal and the United Kingdom.

³³ Bulgaria, Cyprus, Germany, Finland, France, Italy, Spain and Sweden.

³⁴ On average coverage increased by 4.9 % between 2012 and 2016: Agnesi, S., Mo, G., Annunziatellis, A., Chaniotis, P., Korpinen, S., Snoj, L., Globevnik, L., Tunesi, L., Reker, J. 2017, Spatial Analysis of Marine Protected Area Networks in Europe’s Seas II, Volume A, 2017, ed. Künitzer, A., ETC/ICM Technical Report 4/2017, Magdeburg: European Topic Centre on inland, coastal and marine waters, 41 pp.

³⁵ For more information, see the Spatial Analysis of Marine Protected Area Networks in Europe’s Seas II, ETC/ICM Technical Report 4/2017, <https://www.researchgate.net/publication/322759892>.

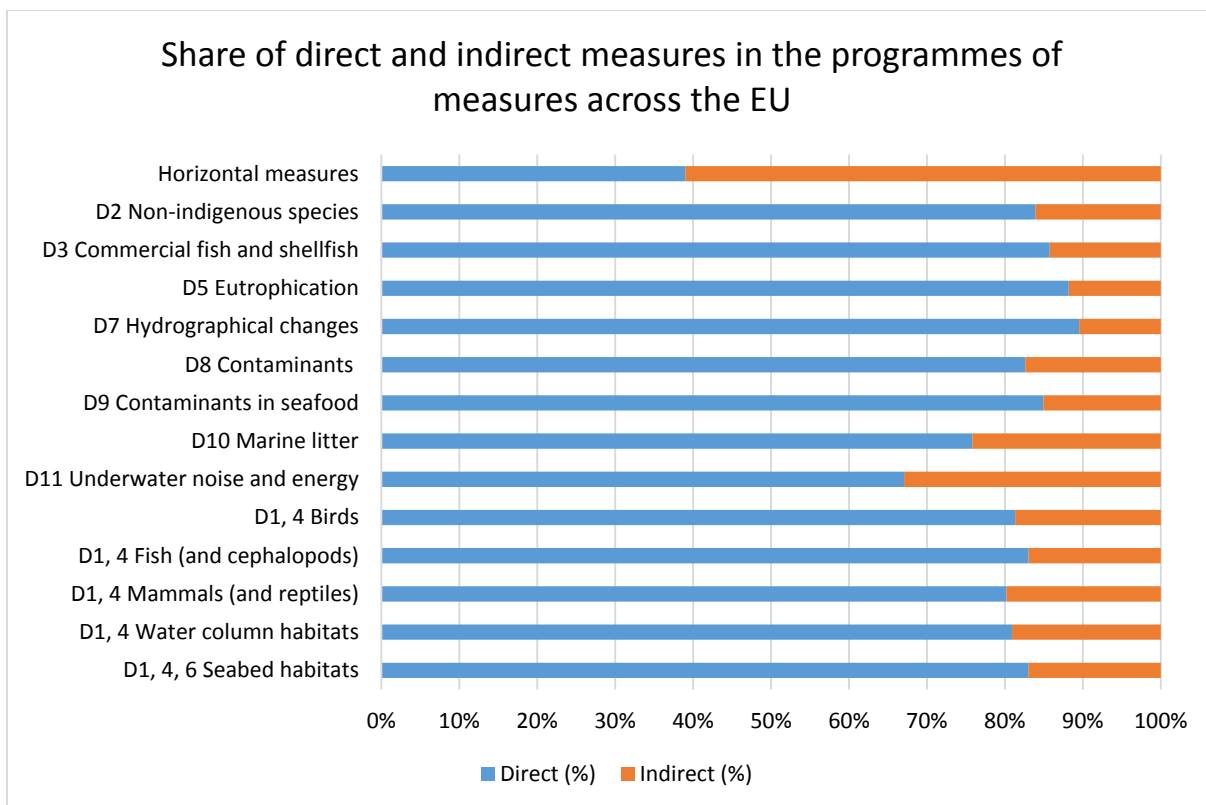


Figure 1 Share of direct and indirect measures in the programmes of measures across the EU

Measures taken to address pressures on the marine environment

This section looks at measures put in place to address the descriptors of the Directive specifically dealing with such anthropogenic pressures.

Non-indigenous species

Non-indigenous species can threaten marine biodiversity when they become ‘invasive’. In Union waters, Member States identify shipping and aquaculture as the two main activities that can lead to the introduction and spread of non-indigenous species.

Ballast water management³⁶ is used by 13 Member States³⁷ to tackle species introduced through shipping. Additional measures, such as adherence to the International Maritime Organisation’s Biofouling guidelines³⁸, may, however, better address the pressure as it limits fouling through a ship’s hull. Measures mentioned by the 16 Member States in their programmes of measures often draw on regional work and existing EU law, such as the EU

³⁶ The management and control of water and sediments loaded and unloaded from the ship.

³⁷ Belgium, Bulgaria, Finland, France, Germany, Ireland, Italy, Malta, the Netherlands, Poland, Spain, Sweden and the United Kingdom.

³⁸ Resolution MEPC.207(62).

regulations on invasive alien species³⁹ and alien species in aquaculture⁴⁰. Some Member States⁴¹ have already introduced targeted measures to reduce the risk of introducing non-indigenous species through aquaculture farms, while several others report that they still need to do further research to better understand the pressure.

The newly-introduced measures range from the direct targeting of non-indigenous species by fishermen to providing incentives for ‘eco-friendly’ ships and/or carrying out awareness-raising initiatives, mostly targeting recreational activities.

That Member States will achieve good environmental status by 2020 for pressures from non-indigenous species, as required by the Directive, cannot be answered given that Member States either could not or did not report on this. Poland, Cyprus and Malta have reported justified exceptions to achieving good environmental status, stating that the introduction of non-indigenous species is due to situations beyond their control (e.g. in the case of the Mediterranean Sea, such species may enter through the Suez Canal).

Measure → *Sweden: national warning and response system for early detection, handling and emergency plans*

Sweden has set up a national warning and response system in its waters that will immediately alert authorities when a new non-indigenous species is spotted. This will trigger rapid response measures for their eradication, control or any other action deemed appropriate, linked to contingency plans. The system will be connected to Sweden’s monitoring programme.

Exploitation of commercial fish and shellfish

Overfishing can have serious consequences leading to the progressive depletion and eventual collapse of stocks. All 16 Member States whose programmes are assessed in this report have introduced measures to minimise the pressure from commercial fisheries. Fourteen Member States⁴² also included specific measures to reduce impacts from recreational fishing.

Fishing pressure affects all EU marine regions, although it is particularly acute in the Mediterranean Sea. In their national programmes, Member States consistently refer to the measures they have taken to comply with the common fisheries policy, which requires that a maximum sustainable yield for fishing stocks be achieved by 2020, thus contributing to the good environmental status goal set by the Marine Strategy Framework Directive. Such national measures include reducing the size of the fishing fleet, reducing the total catch, banning fishing or some types of fishing practices (e.g. trawling) in certain areas.

³⁹ Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species (OJ L 317, 4.11.2014; p. 35).

⁴⁰ Council Regulation (EC) No 708/2007 of 11 June 2007 concerning use of alien and locally absent species in aquaculture (OJ L 168, 28.6.2007, p. 1).

⁴¹ Bulgaria, Cyprus, France, Germany, Ireland, Italy, Latvia, Poland, Malta, the Netherlands, Spain, Sweden and the United Kingdom (for the North East-Atlantic).

⁴² Belgium, Bulgaria, Finland, France, Germany, Ireland, Italy, Latvia, Malta, Portugal, Spain, Sweden and the United Kingdom.

Most Member States⁴³ have also introduced new measures to reduce the pressure on over-exploited stocks, e.g. by requiring the use of specific fishing gear⁴⁴, or by introducing targeted temporal/spatial restrictions or bans⁴⁵. Most Member States⁴⁶ have put in place spatial protection measures, either within the Natura 2000 network or by strengthening the management plans for existing marine protected areas. Several Member States have also introduced measures to raise awareness of destructive fishing practices. Many of them explicitly link the measures taken to agreements made at regional and international level, such as within the context of the Regional Fisheries Management Organisations in the Mediterranean Sea⁴⁷ or the International Commission for the Conservation of Atlantic Tunas. Actions undertaken through Regional Sea Conventions, notably HELCOM and the Barcelona Convention, also feature in the programmes.

Although the Directive requires Member States to achieve good environmental status for pressure from fishing by 2020, there must also be a good synergy with the requirements of the common fishery policy in their national programmes, and most Member States have not yet determined when such a goal will be achieved. Three Member States have reported exceptions, justifiably declaring that good environmental status will be achieved after 2020: Finland and the United Kingdom state that good environmental status for the exploitation of commercial fish and shellfish will not be achieved due to natural conditions, while Malta cites the need for transboundary and regional efforts to achieve the objective.

Measure → *Belgium: better control and monitoring of recreational fishing*

Belgium has recently introduced a legal measure that makes it easier to monitor recreational fishing, an activity which can have a significant impact on the marine environment but is often not regulated by Member States. This national measure, which goes beyond the requirements of the common fisheries policy, will improve data collection, crucial not only to understand the state of fish stocks but also to regulate, if needed and in a more targeted manner, certain fishing activities.

Nutrient input

Excessive inputs of nutrients and organic substances into the sea promote algal blooming, leading to eutrophication. This pressure can stifle marine life, especially around coastal areas and in deeper waters. While it affects all marine waters in the EU to some extent, its impacts are most notable in the Baltic Sea. Nutrient enrichment has mainly been attributed to agriculture, industry, urban discharge, aquaculture and, to a lesser extent, shipping. The problem is compounded by the accumulation of such nutrients in the seabed.

⁴³ Germany, Latvia and Poland did not introduce specific measures, but they refer to the overall implementation of the common fisheries policy, which could potentially address the pressure.

⁴⁴ Bulgaria, Cyprus, Ireland, Malta, the Netherlands and Spain.

⁴⁵ Bulgaria, France, Ireland and Portugal; Belgium introduced quotas.

⁴⁶ Bulgaria, Cyprus, Finland, France, Germany, Ireland, Italy, Poland, Portugal, Spain, Sweden and the United Kingdom.

⁴⁷ General Fisheries Commission for the Mediterranean, GFCM.

In their national programmes, all Member States⁴⁸ have referred to measures taken in their river basin management plans to achieve compliance with the ‘good ecological status’ goal laid down by the Water Framework Directive⁴⁹ and to comply with the parameters laid down by other water-related legislation⁵⁰. Some Member States have also included more specific measures in their marine strategies, such as promoting sustainable aquaculture⁵¹ and agricultural⁵² practices, establishing Nitrogen Oxides (NOx) emissions control areas for shipping⁵³, constructing appropriate port infrastructure for liquefied natural gas⁵⁴ and controlling the discharge of untreated sewage from ships⁵⁵.

The outlook for Member States to achieve good environmental status for the management of nutrient inputs by 2020 is coherent within the individual marine regions. For example, most Member States in the Baltic Sea do not expect to achieve this by 2020, while in the Mediterranean Sea most Member States have indicated that it has already been achieved.

No less than 5 Member States⁵⁶ have invoked exceptions for pressure from nutrient input. However, different reasons have been cited, showing a less consistent regional approach despite the transboundary nature of the pressure. In the Baltic Sea, Finland, Latvia and Poland referred to justified situations beyond their control, with Poland invoking natural conditions as an additional justification, just like Sweden. For the North-east Atlantic, Sweden and the Netherlands use arguments similar to those invoked to justify exceptions in the Baltic Sea.

Measure → *Finland: reducing nutrient inputs to the environment*

By spreading gypsum in fields, this direct measure aims to reduce the concentration in the soil of phosphorus — a nutrient used in agriculture that can lead to eutrophication. Using gypsum reduces leaching of phosphorus into freshwater systems and therefore into the marine environment. It has the advantage of improving the properties of soil and as a result reduces erosion.

Hydrographical changes

Human activities such as coastal infrastructural development, dredging, sand extraction and desalination can impact on the physical properties of marine waters. Impacts can be seen in changes to sea currents or wave action, tidal regimes, temperature, pH levels, salinity or turbidity and can all adversely affect marine species and habitats. Most of the measures reported by Member States relate to existing regulatory frameworks, such as the Water

⁴⁸ While Belgium, Finland, Germany, France, Italy, Malta, Poland, Portugal and Sweden do not specifically mention the river basin management plans, they refer to Water Framework Directive measures.

⁴⁹ Under 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 (OJ L 327, 22.12.2000, p. 1).

⁵⁰ Urban Wastewater Treatment Directive (91/271/EEC), the Nitrates Directive (91/676/EC), Industrial Emissions Directive (2010/75/EU), the Floods Directive (2007/60/EC).

⁵¹ Bulgaria, Cyprus, Finland, Ireland, Italy, Malta, Spain and Sweden.

⁵² Bulgaria, Cyprus, Germany, Finland, Ireland, Italy, Latvia, the Netherlands, Poland, Malta, Spain, Sweden, the United Kingdom and in part Portugal.

⁵³ Bulgaria, Germany, Finland, France, the Netherlands, Poland, Sweden and the United Kingdom.

⁵⁴ Finland and Poland.

⁵⁵ Cyprus, Germany, Ireland, Latvia, Malta, the Netherlands and Poland.

⁵⁶ Finland, Latvia, Poland, the Netherlands and Sweden.

Framework Directive, the Environmental Impact Assessment Directive⁵⁷ and the Strategic Environmental Assessment Directive⁵⁸ and licencing procedures that should generally cover all possible pressures and impacts. However, it is not always clear how Member States plan to apply the measures taken under these Directives in the marine context. Some Member States⁵⁹ have also reported that they are in the process of developing guidance for relevant infrastructure projects as part of their measures. Only two Member States⁶⁰, however, clearly address the cumulative impacts of such infrastructures.

For anthropogenic pressures leading to hydrographical changes, Member States did not invoke any of the Article 14 exceptions to achieving good environmental status. Of the 16 Member States whose national programmes are assessed in this report, 4 Member States⁶¹ have stated that good environmental status has already been achieved, while 2 Member States⁶² claim that it will be reached by 2020. Other Member States have either not specified when good environmental status will be achieved or cannot estimate it.

Measure → *France: assessment of cumulative impacts*

France is currently developing a guidance document to help the relevant authorities and stakeholders assess the cumulative impacts of human activities, especially for those projects that would require an environmental impact or a strategic environmental assessment. This will be particularly relevant for hydrological pressures for which cumulative impacts have until now rarely been addressed.

Contaminants in the sea and in seafood

Most contaminants, mainly from agricultural pesticides, ship anti-foulants⁶³, pharmaceuticals, industry and urban effluents, including heavy metals, end up in the sea. This discharge turns seas and oceans into an environment that is likely to harm marine life, and ultimately contaminate seafood for human consumption. It is therefore important for both environmental and human health reasons to ensure that the levels of contaminants in the marine environment remain low and within safe limits.

Of all the sources of contaminants, atmospheric deposition in the marine environment is the source least addressed in the national programmes reported by the Member States.

Their programmes also contain very few measures directly targeting contaminants in seafood intended for human consumption as measures taken for contaminants in general are argued to be likely to also reduce any negative impact on seafood. Among the measures reported in this

⁵⁷ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (OJ L 26, 28.1.2012, p. 1).

⁵⁸ 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 (OJ L 197, 21.7.2001, p. 30).

⁵⁹ Ireland, Italy, the Netherlands, Poland, Spain, Sweden and the United Kingdom.

⁶⁰ France and Germany.

⁶¹ Finland, the Netherlands, Spain and Sweden. Italy considers that good environmental status has been reached in the Adriatic Sea but does not specify for other regions.

⁶² France and the United Kingdom.

⁶³ Paints applied to the hull of vessels that slow the growth of aquatic organisms or aid their detachment.

context, Member States refer to those needed to secure compliance with EU food safety legislation⁶⁴ and other regulatory standards applicable to fished and aquaculture products, notably on traceability, health quality requirements, breeding and farming conditions, risk assessments and management measures.

For actions more generally aimed at reducing the presence of contaminants in the sea, a number of Member States report several measures which stem from EU requirements, such as those needed to achieve compliance with the Directives on nitrates⁶⁵, urban waste water⁶⁶, air emissions⁶⁷, ship source pollution^{68,69} and the REACH regulation^{70,71}. International commitments either under MARPOL⁷² or the Regional Sea Conventions are also referred to, although the national programmes are often unclear as to which concrete actions are specifically planned for such international commitments. In addition to these existing EU or international requirements, 10 Member States⁷³ have introduced some direct measures, such as further regulating the discharge of contaminants, reducing the use of pesticides, improving aquaculture and dredging practices, and some indirect measures, such as awareness-raising and research activities.

Exceptions to achieving good environmental status for contaminants have been requested by Poland and Sweden in the Baltic and by the Netherlands, the United Kingdom and Sweden in the North-east Atlantic Ocean region. The justifications invoked to benefit from such exceptions do not always appear to be technically convincing, for example when it comes to citing disproportionate costs without providing sufficient justification, including a cost-benefit analysis and an analysis of the advantages and disadvantages of alternative remediation actions. In addition to this, timelines for achieving good environmental status vary across the regions, which is worrying for such a well-referenced pressure —subject to a long list of laws and policy initiatives at both EU and international level.

⁶⁴ Notably referring to Commission Regulation (EC) No 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs (OJ L 364, 20.12.2006, p. 5).

⁶⁵ Bulgaria, Germany, Italy and Spain.

⁶⁶ Belgium, Bulgaria, Germany, Finland, France, Ireland, Latvia, Malta, the Netherlands, Poland, Spain, Sweden and the United Kingdom.

⁶⁷ Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC (OJ L 344, 17.12.2016, p. 1).

⁶⁸ Directive 2009/123/EC of the European Parliament and of the Council of 21 October 2009 amending Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements (OJ L 280, 27.10.2009, p. 52).

⁶⁹ Belgium, Bulgaria, Cyprus, Germany, Finland, France, Ireland, Italy, Latvia, Malta, the Netherlands, Poland, Portugal, Spain, Sweden and the United Kingdom.

⁷⁰ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

⁷¹ Cyprus, Germany, Finland, France, Ireland, Italy, Latvia, Spain, Sweden and the United Kingdom.

⁷² International Convention for the Prevention of Pollution from Ships (MARPOL).

⁷³ Belgium, Bulgaria, Germany, Finland, France, Malta, the Netherlands, Poland, Portugal, Spain and Sweden.

Two Member States⁷⁴ justify their exceptions to achieving good environmental status for contaminants in seafood on the grounds that the relevant polluting sources are also found outside their marine waters. Most⁷⁵ of the North-east Atlantic Member States seem to agree that good environmental status will be achieved by 2020, while in the other three regional seas this either cannot be estimated or is expected to happen only after 2020.

Measure → *Poland: targeting different sources of contaminants*

Poland has adopted a mix of measures to target different contaminants that find their way into its marine waters. Its programme includes measures that regulate contaminants such as dredged materials, paraffin and their derivatives. It is also embarking on reconstructing its storm water and sewage systems, while introducing measures to reduce contaminants from water discharged from the exhaust treatment systems. It also reports new actions to reduce risks from oil pollution and other harmful substances. Other measures include plans to modernise its inland waterway fleet, permitting provisions for discharging industrial waste water and improving the water management of seven river basins.

Marine litter

Litter is a pressure on the marine environment that eventually finds its way to the seafloor and onto beaches. Implementation of the Marine Strategy Framework Directive has led to an improved understanding of macro- and micro-litter, notably from plastics. Sources of marine litter have been mostly attributed to the following human activities: tourism and recreational activities, urban waste, industrial activities, shipping and commercial fishing. To fight marine litter, Member States draw on a number of existing EU laws, notably on waste management, urban waste water or port reception facilities⁷⁶, as well as on international agreements and the action plans of Regional Sea Conventions⁷⁷. Based on their national programmes, it appears that all 16 Member States are taking, or plan to take, measures to improve waste management in the fisheries sector. The most common measures notified are beach clean-ups, ‘fishing for litter’ and communication initiatives. While these have a modest impact on reducing the pressure, they help to raise awareness and thus to prevent future pollution. However, targeted measures for beach litter, such as limiting the proliferation of single-use plastics or reducing microplastics and litter from aquaculture, appear to be underdeveloped. For example, only five Member States⁷⁸ specifically addressed aquaculture.

Measure → *France: marine waste reduction & shellfish farming*

France has two noteworthy measures for marine litter. The first one is part of the national waste prevention programme and consists of four actions: (1) extending producers’

⁷⁴ Finland and Malta.

⁷⁵ Belgium, France, Ireland, the Netherlands and the United Kingdom.

⁷⁶ Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues, OJ L 332, 28.12.2000, p. 81-90.

⁷⁷ Regional action plans exist for the North-east Atlantic, Baltic and Mediterranean regions, while the action plan for the Black Sea is being developed.

⁷⁸ France (in the North-east Atlantic), Ireland, Italy, Spain and Sweden.

responsibility; (2) limiting certain products, such as single-use plastic bags;⁷⁹ (3) promoting voluntary actions to reduce and recycle marine litter; and (4) aligning regional litter prevention and management plans with the water and marine policy tools, the port waste reception and treatment plans. The second measure tackles shellfish aquaculture, an activity which can be a significant source of litter, but which is only rarely addressed in other Member States' programmes of measures. France plans to limit the degradation of the impacted habitats by limiting access to the relevant marine culture plots in tidal areas, and by collecting and recycling litter generated by them.

The programmes of measures for marine litter have to be seen in the wider context of developments at EU level, which led to the adoption of the Circular Economy Package⁸⁰, the European Strategy for Plastics⁸¹ and a legislative proposal on marine litter and single-use plastics⁸².

Of the 16 Member States, only 6⁸³ expect to achieve good environmental status for litter by 2020. Malta is the only Member State having applied for an exception on the grounds that actions from neighbouring countries would allegedly hamper its efforts; however, such proposed justification does not appear to be fully substantiated and no alternative timeline is reported.

Energy, including underwater noise

Energy use, for example in the form of heating and electricity systems, noise, electromagnetic radiations, radio waves or vibrations, can also be a pressure on the marine environment. So far, most Member States have focused their efforts on underwater noise, whose effects are complex and not yet fully understood. Noise may, for example, chase away marine species from their breeding grounds, impact their hearing and therefore make them more vulnerable. The effect also depends on the type of noise, continuous or impulsive, and the frequency. Noise may come from shipping, marine research, offshore energy platforms, construction operations and defence activities. Member States have yet again drawn on EU legislation such as the Habitats Directive and the Environmental Impact Assessment Directive. Again, international agreements and initiatives taken through the Regional Sea Conventions are also featured in their programmes of measures. Measures include protecting specific areas from both impulsive and continuous noise; developing 'eco-friendly' ships; limiting the use of certain types of lights on oil and gas platforms; and raising awareness, carrying out research and developing guidelines for noise assessments. While most pressures are addressed, these

⁷⁹ Meanwhile, France has also adopted an unreported measure that bans non-biodegradable single-use plastics from 2020 and another which bans non-biodegradable plastic cotton buds and microbeads in certain cosmetic products.

⁸⁰ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *Closing the loop — An EU action plan for the Circular Economy*, COM(2015) 614 final.

⁸¹ 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*, COM(2018) 28 final.

⁸² Proposal for a Directive of the European Parliament and of the Council on the reduction of the impact of certain plastic products on the environment, COM(2018) 340 final.

⁸³ Belgium, Finland, France, Ireland, the Netherlands and the United Kingdom.

are often covered indirectly through research which Member States have reported together with their measures.

Six Member States⁸⁴, mostly from the North-east Atlantic Ocean region, expect to achieve good environmental status by 2020. However, given the current knowledge gaps, some⁸⁵ cannot estimate when it will be achieved or have not specified a date for when it is to be achieved⁸⁶. No Member State has applied for an exception.

Measure → *Cyprus: noise from hydrocarbon exploration*

Cyprus reports a measure that addresses impulsive underwater noise, by requiring ‘soft-start/slow-start’ conditions in the exploration and exploitation of hydrocarbons. This includes seismic surveys at sea, as defined in the Strategic Environmental Assessment and Environmental Impact Assessment Directives and in the Offshore Protocol of the Barcelona Convention.

Measures taken to address the state of marine biodiversity

Curbing the negative impacts of pressures on the marine environment should improve conditions for marine species and habitats. Therefore, the measures described in the previous sections should help maintain or improve the state of marine biodiversity. Most Member States, however, do not make sufficient links between the two, which limits the effectiveness of the programmes. Member States have, nevertheless, earmarked measures that deal with various marine habitats, such as spatial protection measures, although these are limited in spatial scope and may not be targeting areas where pressures are most predominant (e.g. seabed trawling outside protected areas).

Birds

Incidental by-catch from commercial fishing activities was the predominant pressure that Member States reported was affecting birds. Other pressures they reported included marine litter, non-indigenous species, oil pollution and visual light disturbance. Despite the prevalence of habitat loss due to human activity, contaminants in the sea and hunting, Member States cited them less often as pressures. It is not surprising that most measures relate to implementation of the Birds Directive and the Habitats Directive, and therefore to the creation of special protection areas and special areas of conservation⁸⁷ to protect bird habitats, breeding, nesting and feeding grounds. Member States also report that they are applying the rules of the common fisheries policy to address by-catch, which means restricting the use of certain fishing gear, for example, to reduce the chance of birds being caught or promoting sustainable fishing tools and techniques. Member States only occasionally refer to the

⁸⁴ Belgium, Finland, France, Ireland, the Netherlands and the United Kingdom.

⁸⁵ Germany, Malta and Sweden.

⁸⁶ Cyprus, Italy, Poland, Portugal and Spain. Bulgaria and Latvia had not determined their good environmental status.

⁸⁷ As established under the Birds Directive and the Natura 2000 Network respectively.

Maritime Spatial Planning Directive⁸⁸, which could help to designate areas for fishing while reducing the impacts on birds.

All North-east Atlantic Member States also link their measures to OSPAR recommendations on conservation, whereas some⁸⁹ of the Baltic Sea Member States refer to HELCOM's 'Baltic Sea Action Plan'. In the Mediterranean, most Member States generally refer to the Barcelona Convention's action plans for bird species and marine protected areas.

Ten Member States⁹⁰ do not report when they will reach good environmental status, citing either gaps in knowledge as the reason or providing no further justification. No exceptions have been reported.

Measure → *Malta: protecting birds from predators*

Malta is applying a measure⁹¹ to protect the Yelkouan shearwater (*Puffinus yelkouan*) from predator rats. Food litter from human recreational activities in a special protection area has led to an increased presence of rats, which cause significant predation pressures on birds. To more effectively protect the bird species and their habitats, the project aims at increasing people's awareness of the problem and therefore changing their behaviour in protected sites to reduce littering and the presence of pests. The measure goes beyond what is already addressed under the Birds Directive.

Fish and cephalopods

In addition to the obvious pressure from fishing for commercial species, by-catch is one of the most important pressures, followed by contaminants. Habitat loss and damage, litter and underwater noise are less often cited by Member States in their programmes. Commercial species are generally well addressed through the measures for commercial fish and shellfish, as discussed above. These measures include fishing bans in certain areas and/or banning fishing practices like trawling. However, non-commercial species are not always covered. Thirteen Member States⁹² also restrict the use of certain fishing techniques, therefore also targeting by-catch. Most Member States report using spatial protection measures based on the Habitats Directive's Natura 2000 network to protect some fish species and to a lesser extent, the Water Framework Directive to protect migratory pathways for fish. Spatial measures have also been used to protect certain seabed habitats which act as fish breeding and nursery grounds. In addition to linking their measures to Regional Sea Conventions, like in the case of birds, Mediterranean Member States, in particular, also refer to initiatives with regional fisheries management organisations. Awareness-raising⁹³ campaigns, such as those informing consumers about sustainable fishing practices or targeting professional and recreational

⁸⁸ Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning, (OJ L 257, 28.8.2014, p. 135).

⁸⁹ Latvia, Poland and Sweden.

⁹⁰ Bulgaria, Cyprus, Finland, Germany, Italy, Portugal, Latvia, Malta, Spain and Sweden.

⁹¹ Financed through the LIFE programme.

⁹² Belgium, Bulgaria, Cyprus, France, Ireland, Italy, Malta, the Netherlands, Poland, Portugal, Spain, Sweden and the United Kingdom.

⁹³ Bulgaria, France, Italy, Germany, Malta, Portugal, Spain, Sweden and the United Kingdom.

fishermen, provide added value to the other, more direct measures. Some⁹⁴ Member States mention the need for more research, especially to understand what impacts the pressures affecting this species group are having.

Poland has claimed an exception to achieving good environmental status, as it maintains that other environmental factors, such as climate change and salinity, prevent it from doing so. This is only partially justifiable with the information provided (without evidence for changing trends in indicators linked to predictable changes in temperature and salinity). The United Kingdom reports a justified exception due to the time needed for fish populations (biomass) to react to changes in fishing rates, coupled with other biological and climatic conditions. Three Member States⁹⁵ report that they will achieve good environmental status by 2020.

Measure → *Germany: raising consumer awareness of sustainable fishing*

A new measure in Germany consists of an information campaign targeting a variety of seafood consumers to raise their awareness of ‘sustainable and ecosystem-friendly fisheries’. The campaign will develop teaching and information material based on the best scientific data available and on the current state of research. The aim is consumer behaviour that is more environmentally friendly and supportive of sustainable fishing techniques. Indirectly, it aims to use consumer demand as an incentive for the fishing industry to adopt more sustainable fishing practices.

Mammals and reptiles

Marine mammals and reptiles, such as whales, seals and turtles, are affected by incidental by-catch from commercial fishing activities, and by habitat loss, contaminants, marine litter, collisions with vessels and underwater noise. Most Member States report they have taken spatial protection measures through the Habitats Directive to protect habitats, including breeding, feeding, and nesting sites. In fact, most new measures focus on spatial protection, including those to reduce underwater noise. Incidental by-catch is regulated through the common fisheries policy with new measures on using more selective fishing gear. However, few Member States⁹⁶ make the link between marine litter and mammals and turtles, even though these species are likely to be ingesting litter or getting entangled in lost or abandoned fishing gear. Several Member States have also linked measures to the Maritime Spatial Planning Directive⁹⁷ and the Environmental Impact Assessment Directive⁹⁸. In addition to linking their measures to Regional Sea Conventions, most Member States link measures to the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) and the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (ASCOBAMS). Other measures include reducing the impact from lost fishing gear and mitigating measures in case of oil pollution.

⁹⁴ Bulgaria, France, Italy, Latvia, Poland and Portugal.

⁹⁵ Belgium, France and Ireland.

⁹⁶ Bulgaria, France (for the North-East Atlantic), Spain and Sweden.

⁹⁷ Belgium, Bulgaria, Germany, Finland, France (for the Mediterranean), Ireland, Italy, Latvia, Poland, Portugal, Sweden and the United Kingdom.

⁹⁸ Bulgaria, Cyprus, Germany, France (for the North-East Atlantic), Ireland, Italy, Latvia, Malta, the Netherlands, Poland, Spain, Sweden and the United Kingdom.

Awareness-raising activities such as informing fishermen of the impact of aggressive fishing techniques on mammals and turtles or encouraging tourists to opt for sustainable tourist activities are also among the measures reported.

Only a handful of Member States⁹⁹ claim that they will achieve good environmental status by 2020. Poland reported an exception stating that it will not achieve good environmental status by 2020 for harbour porpoises given the migratory nature of the species and the fact that most by-catch occurs outside its marine waters, a justification that does not appear grounded as the issue of by-catch from outside its waters can be adequately controlled through cross-border partnership processes.

Measure → *Italy: reducing collisions with ships*

Vessels are responsible for a significant number of mortalities of cetaceans in the Mediterranean. Through the REPCET project¹⁰⁰, Italy aims to place software on board all vessels to help identify the presence and location of cetaceans underwater, thus reducing the number of collisions and the mortality rate. The measure will also train vessel operators to use such software.

Water column habitats

Species living in water column habitats face multiple pressures, such as contaminants, eutrophication, non-indigenous species, fish extraction, by-catch and litter. Member States' programmes rarely link the measures for these pressures to water column habitats, making it difficult for Member States to determine how good environmental status will be achieved for these habitats. Very few specific measures have therefore been reported.

Nevertheless, management plans for marine protected areas, the implementation of the Habitats Directive's Natura 2000 Network and the adoption of other national spatial protection measures contribute to the well-being of these habitats. The Water Framework Directive also plays a role by reducing the concentration of nutrients and contaminants and improving hydrological conditions, thus reducing eutrophic conditions and the pollution of marine waters. Regional links were also drawn for other habitat types. Again, only 3 Member States¹⁰¹ report they will achieve good environmental status by 2020, but no Member State has applied for an exception.

Measure → *Sweden: pressure-state relationships for the water column habitats*

Sweden has strongly linked its biodiversity measures to measures tackling specific pressures in water column habitats, therefore looking at pressures cumulatively to safeguard marine biodiversity. This thorough approach in achieving good environmental status for biodiversity also follows the rationale behind Decision 2017/848/EU. These measures address:

⁹⁹ Belgium, France, Ireland and the United Kingdom.

¹⁰⁰ <http://www.repcet.com>.

¹⁰¹ Ireland, France and the United Kingdom.

- commercial fish and shellfish through fishing regulations and management, marine protected areas and seasonal closure areas;
- eutrophication by reducing long-term nutrient load locally in eutrophic bays and in the Baltic Sea;
- contaminants by managing the discharge of hazardous substances, such as antifouling substances and sewage;
- non-indigenous species through indirect measures that include awareness-raising, management plans and risk-reduction measures.

Seabed habitats

There are various human activities that impact the seabed, particularly through physical disturbance, the most widespread being bottom-trawl commercial fishing. Over time, this has led to a significant loss of sensitive seabed habitats and caused long-lasting widespread damage to seabed habitats. Other potentially harmful activities include land claim, port operations, solid waste disposal (including dredged material), marine mining of sand and gravel, the laying of submarine cables and pipelines and renewable energy operations. Regulatory approaches were included in the programmes of measures to address most of these activities. For example, spatial protection measures are the primary tool of choice, including those under the Habitats Directive. All 16 Member States reported on initiatives to protect vulnerable habitats from fishing activities which are harmonised with measures for sustainable fishing (mostly drawing on the common fisheries policy such as banning certain types of fishing, including bottom-trawl fishing, and introducing less seabed-destructive fishing gear). Other regulatory tools referred to include environmental impact assessments for other pressures such as nutrient levels from aquaculture. For other pollution effects, Member States cite measures under the Water Framework Directive. Regional links were also drawn for other habitat types. Seabed damage may also occur through recreational activities, such as the anchoring of recreational boats or recreational fishing, for which 4 Member States¹⁰² have reported measures. However, these measures were often confined to specific areas. As a result, a significant proportion of seabed habitats occurring outside of spatial protection areas and which are impacted by human activities, will likely remain largely unaddressed by Member States.

Several Member States also pursued activities to raise awareness¹⁰³ of the destructiveness of certain commercial fishing methods on seabed habitats and performed research¹⁰⁴ that included, for example, mapping seabed habitats.

Five Member States¹⁰⁵ reported that they will achieve good environmental status by 2020, with Poland requesting an exception and linking this to natural conditions such as slow recovery of the marine environment, non-indigenous which have spread significantly in Polish waters and areas with naturally occurring seasonal low oxygen levels. However, the justification only partly supports the exception as no efforts are made to identify specific

¹⁰² Belgium, Bulgaria, France and Spain.

¹⁰³ Bulgaria, Germany, Italy, Malta and Portugal.

¹⁰⁴ Bulgaria, France, Germany, Latvia, Poland, Portugal, the Netherlands, Spain and Sweden.

¹⁰⁵ Belgium, Finland, France, Ireland and the United Kingdom.

habitats affected by the non-indigenous species and the fact that vast majority of oxygen depletion in the Baltic is considered to be due to nutrient enrichment.

Measure → *Spain: guidelines for recreational marine activities*

The anchoring of boats physically damages the seabed and may even lead to seabed habitat loss given its vulnerable state. These impacts are most severe in seagrass beds (*Posidonia oceanica* and *Cymodocea nodosa*) and on certain species included in the Spanish catalogue of threatened species, such as the noble pen shell (*Pinna nobilis*) and the cushion sea star (*Asterina pancerii*). For this reason, Spain embarked on guidelines for authorities to regulate this activity in protected seabed habitats. It goes beyond activities that are usually addressed under the Habitats Directive.

How do Member States perform?

Measures against pressures

In their programmes of measures, Member States have at least partially addressed a number of pressures: the introduction of non-indigenous species, commercial fisheries, nutrient input, pressures on seabed habitats, hydrographical changes, contaminants and marine litter. Figure 2 shows how many of the pressures Member States reported in their Article 8 assessments have been appropriately addressed by measures.

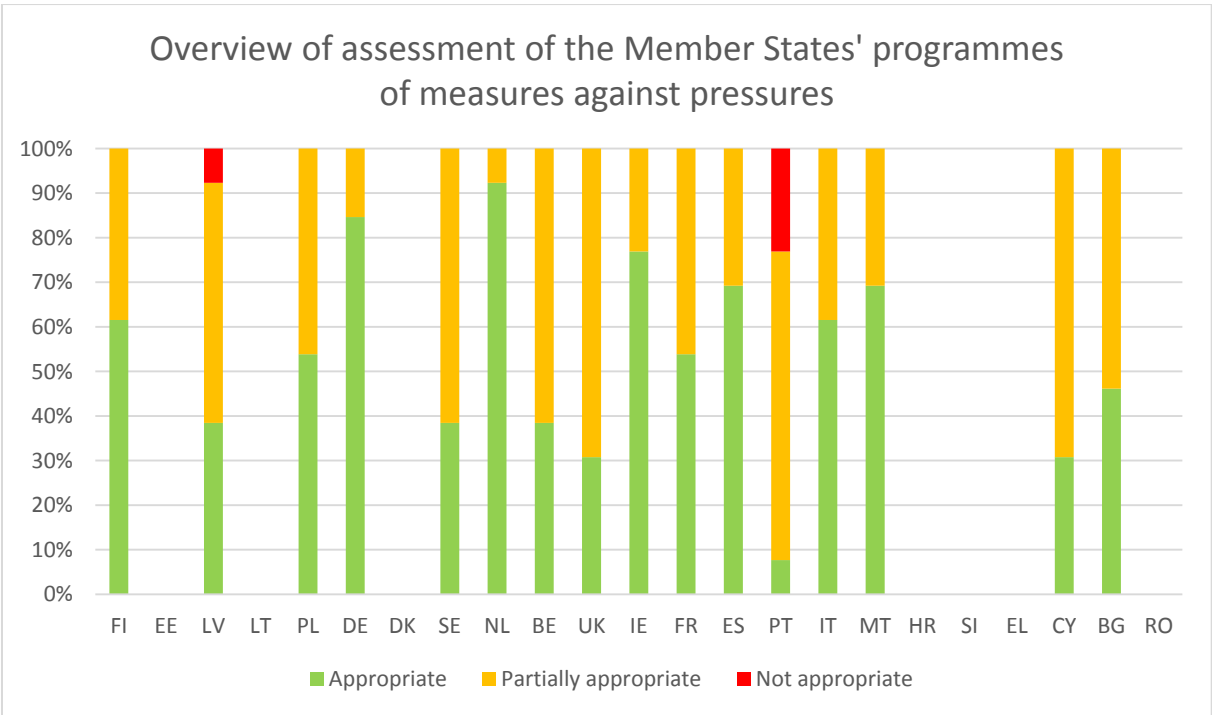


Figure 2 Appropriateness of Member State measures against pressures (Member States are presented in geographical order per marine region)

For each Member State, the number of times the descriptor-specific measures have been assessed as addressing (green), partially addressing (orange) and not addressing (red) what the

Member State reported in Article 8 (e.g. 100 % ‘addressing pressures’ means that the programme addresses the reported pressures for all descriptors).

Timelines, implementation of measures and their effectiveness

The timelines reported by Member States provide a mixed picture for when good environmental status will be achieved, as explained in the relevant sections above and summarised in Figure 3. This may in part be because Member States report that some measures were not operational by 2016 as required by the Directive. It should also be noted that the measures reported are not always directly linked to the determinations of good environmental status and the environmental targets. Furthermore, the lack of consistency at a (sub)regional level¹⁰⁶ in defining their good environmental status and the varying level of ambition by Member States, adds to the uncertainty over whether measures are sufficient to achieve good environmental status by 2020. The full implementation of Decision 2017/848/EU is expected to provide for a more comparable and coherent approach to subsequent updates of these determinations and thereby support the assessment of the sufficiency of the measures.

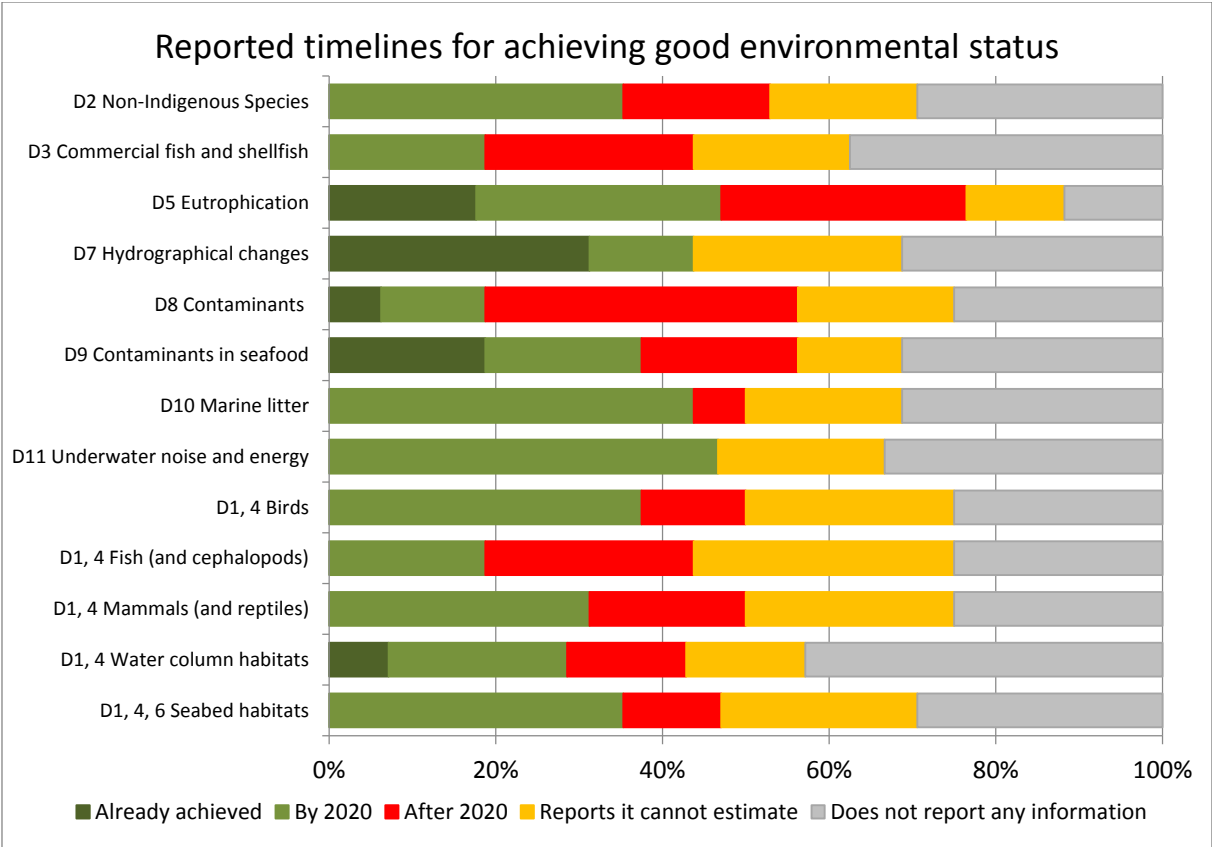


Figure 3 Timelines for achieving good environmental status as reported by Member States

¹⁰⁶ COM(2014) 97 final.

The second observation relates to the likelihood these measures will be implemented, especially the new measures (given that other measures were reported to be ongoing, for example, through other policy frameworks). Three groups of Member States are observed.

Highly likely	Belgium, Finland, France, Germany, Italy, Spain, Sweden, United Kingdom	These Member States made a cost-benefit analysis when introducing new measures and have indicated those entities that would be responsible for implementing them. They also reported that implementation had already started in 2016, though some measures were slightly delayed (2017 or 2018).
Likely	Bulgaria, Latvia, Malta, The Netherlands, Poland, Portugal	The cost-benefit analysis as reported does not cover all new measures and not all timelines have been indicated by these Member States. Of those reported, a large number are expected to be implemented after 2018, with some going beyond 2020. Member States have generally indicated the entities responsible for implementing these measures.
No conclusion	Cyprus, Ireland	Information provided by these Member States does not allow for a conclusion to be reached.

Table 1 — Likelihood of implementation of new measures¹⁰⁷

However, the cost-benefit assessments, where these were done, do not tell the whole story. Also, the implementing authority, the funding and the budgetary allocations were not always indicated, casting doubt on the likelihood the measures in question will be implemented. The potential impacts of the measures were not quantified either and at best were described in a qualitative manner.

Reporting at an appropriate level of detail would have allowed for a better understanding of what the measure was striving to achieve. Also, the effects of ongoing measures on the marine environment could not be gauged. Therefore, quantifying how much of the pressure will be reduced and whether the measures themselves are sufficient to achieve good environmental status was not possible. While acknowledging that this could not be done for some measures due to, for example, gaps in knowledge, it would have strengthened the assessment if Member States’ efforts could be translated into a tangible assessment of the positive effects they will have on the marine environment.

Another observation is that while most Member States refer to their respective Regional Sea Conventions and to international agreements, some Member States cite regional action plans and regional or international commitments only in general terms without specifying what kind of measures are being implemented. Yet again, what such measures are meant to achieve

¹⁰⁷ No Member States were assessed as unlikely to implement their new measures.

could not be pinned down. In most cases, measures do not look at a region or sub-region but are limited to a geographical scope within national waters.

Conclusions and recommendations

Member States have made considerable efforts to develop their programmes of measures. They have integrated different national, EU and international policies and processes for the sole purpose of protecting the marine environment. Most Member States have also established new measures to specifically target pressures on the marine environment that would otherwise not be covered, thus showing the added value of the Marine Strategy Framework Directive. However, for certain pressures of transboundary nature, the lack of regional or EU coordination potentially leads to a fragmented and ineffective approach to tackling the pressure. In the case of plastic marine litter, the problem is now being addressed through action at EU level, notably through the European strategy for plastics in a circular economy and its subsequent actions.

Nevertheless, the assessment shows that not all the pressures on the marine environment are covered properly through the measures adopted by Member States. The programmes themselves have varying levels of ambition. Achieving good environmental status by 2020 across all European marine regions and for all the 11 descriptors of the Directive remains unlikely. Even though it is known that ecosystems are slow to respond to change, this is disappointing as it means the main obligation of the Directive — good environmental status — is unlikely to be fulfilled on time. In 2018, Member States are expected to report¹⁰⁸ on the state of implementation of their programme of measures. This should provide a clearer understanding of where they stand with the implementation of all of their measures.

Member States are also expected to report updates of their determination of good environmental status, targets, and assessment of environmental status by October 2018¹⁰⁹. The Commission will build on these different elements to issue an implementation report in 2019 which will review progress¹¹⁰, ahead of the 2020 deadline for achieving good environmental status.

In conclusion, the Commission's assessment is that improvements - of varying degrees for different countries - are needed for all programmes of measures if they are to be considered as an appropriate framework to meet the requirements of the Directive. Applicable guidance on modifications necessary is included as a set of recommendations in the table below. Country specific guidance is provided in the form of recommendations included in the staff working document accompanying this report¹¹¹:

Category	Recommendations
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¹⁰⁸ Article 18.
¹⁰⁹ Article 17(2)(a) & (b).
¹¹⁰ Article 20.
¹¹¹ The Annex to this report (SWD(2018)393) contains further specific conclusions and recommendations per descriptor and per Member State.

<p>Measuring effectiveness: <i>International & regional references</i></p>	<p>In measuring the effectiveness of measures Member States should:</p> <ul style="list-style-type: none"> • identify measures for each marine region or sub-region concerned, for example, by using regional action plans; • explain what specific measures stemming from regional or international initiatives are being implemented as part of their programme and do not refer to regional and international action plans in general terms;
<p>Measuring effectiveness: <i>Implementation timelines, funding and entity responsible</i></p>	<ul style="list-style-type: none"> • identify the timelines for implementation, secured funding, and the entities in charge of implementation for all their measures; • estimate the alternative dates of when good environmental status will be achieved if it is not expected by 2020;
<p>Measuring effectiveness: <i>Link with targets</i></p>	<ul style="list-style-type: none"> • systematically use targets as milestones towards achieving good environmental status through the measures;
<p>Measuring effectiveness: <i>Link with monitoring programmes</i></p>	<ul style="list-style-type: none"> • better connect their measures with their monitoring programmes when these are next updated in 2020, to evaluate their effects and hence efficiency and effectiveness in meeting targets and good environmental status;
<p>Measuring effectiveness: <i>Quantification of pressures and link with good environmental status</i></p>	<ul style="list-style-type: none"> • quantify the pressures present in their waters and their expected level of reduction as a result of the established measures. This could be facilitated by further efforts to address gaps in knowledge and define the methodology for such estimations at regional or EU level. Such quantification will also help to link the measures to achieving good environmental status.
<p>Tackling pressures: <i>Addressing pressures that have been inadequately covered</i></p>	<p>In tackling pressures, Member States should:</p> <ul style="list-style-type: none"> • cover pressures and associated human activities better, including: the introduction of non-indigenous species from shipping because of bio-fouling, recreational fishing, nutrient enrichment from atmospheric sources, cumulative impacts from individual projects on hydrographical conditions, contaminant inputs from atmospheric sources, the introduction of macro- and micro-litter into the marine environment from coastal and offshore activities, and the generation of underwater noise (as well as heat and energy if feasible) in the marine environment from various sources; • ensure that prevalent pressures in the same marine region or sub-region are covered by all Member States in the region;
<p>Tackling pressures: <i>Spatial coverage for species and habitats</i></p>	<ul style="list-style-type: none"> • ensure wider geographic coverage when addressing pressures on marine species and habitats, especially in the open sea, so that measures are not only limited to spatially protected areas;

<p>Tackling pressures: <i>Combination of direct & indirect measures (intervention vs governance/awareness)</i></p>	<ul style="list-style-type: none"> • implement measures that regulate or guide those activities that impact on the marine environment, in addition to more horizontal measures that improve governance, coordination and promote awareness-raising;
<p>Tackling pressures: Art.11 vs Art.13</p>	<ul style="list-style-type: none"> • report data collection and monitoring efforts under their monitoring programmes for the Marine Strategy Framework Directive (Article 11) and not under the programme of measures (Article 13). However, when knowledge is too scarce to design effective measures, it is useful to indicate actions taken via research initiatives to address these gaps;
<p>Tackling pressures: <i>Pressure-state relationship</i></p>	<ul style="list-style-type: none"> • improve the links between the groups of measures reported for pressure descriptors and their potential benefits for the state descriptors, to enable a comprehensive overview of the impacts;
<p>Tackling pressures: <i>Spatial scope of measures</i></p>	<ul style="list-style-type: none"> • define the spatial scope of measures in detail; • expand the spatial scope of measures to cover marine waters beyond coastal waters, where relevant pressures are present;
<p>Tackling pressures: <i>Exceptions</i></p>	<ul style="list-style-type: none"> • further justify Article 14 exceptions that are considered technically ungrounded or partially grounded in the assessment.