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PART 2/2

COMMISSION STAFF WORKING DOCUMENT

EVALUATION

Accompanying the document

PROPOSAL FOR A DIRECTIVE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL

amending Directive 2005/35/EC on shop-source pollution and on the introduction of penalties, including criminal penalties, for pollution offences

{COM(2023) 273 final} - {SEC(2023) 209 final} - {SWD(2023) 164 final}

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Glossary

Term or acronym	*Meaning or definition*
CSN	CleanSeaNet service - EMSA European satellite-based oil spill monitoring and vessel detection service
Detection	Any activity undertaken by national authorities or EMSA to notify on a possible illegal discharge into sea e.g. by satellite surveillance (CleanSeaNet), monitoring of the sea area by aerial and coastal surveillance (aircrafts and coastguard patrol boats).
Discharge	Discharge, jettisoning or disposal of polluting substances into sea.
ECD	Environmental Crime Directive
ECJ	European Court of Justice
EEZ	Exclusive Economic Zone
EMSA	European Maritime Safety Agency
Enforcement	Any activity undertaken by national authorities for the purpose of detection, verification or prosecution.
European seas	All maritime zones in the EU in accordance with the 1982 United Nations Convention on the Law of the Sea (UNCLOS Convention)
EU	European Union
IMO	International Maritime Organisation
MARPOL	The International Convention for the Prevention of Pollution from Ships of 1973 and the Protocol of 1978 as subsequently amended
PRF	Port Reception Facilities
Prosecution	Any activity undertaken by national authorities, under administrative or criminal law, deciding that the offender should be penalised by imposing a fine or other penalty or otherwise related court proceedings with regards to ship-source pollution offences, based on the evidence collected under the investigation of the incident and any additional evidence that will be brought in the relevant proceedings by the parties.
Scrubbers	Exhaust Gas Cleaning Systems, both open-loop and closed-loop. The discharge water from scrubbers, treated by the 2021 IMO Guidelines for Exhaust Gas Cleaning Systems as 'EGCS residues', are prohibited to be discharged overboard into sea.
SPP	Ship-Source Pollution
SSN	SafeSeaNet, the EU maritime information exchange system - vessel traffic monitoring and information as defined in Directive 2002/59/EC. It comprises a network of national SafeSeaNet systems in Member States and a central SafeSeaNet system acting as a nodal point managed by EMSA.

THETIS	EU Port State Control vessel inspection database
THETIS EU	EU Inspection Database to support inspections carried out under EU maritime safety and environmental legislation (other than Port State Control) e.g. Port Reception Facilities Directive 2019/883/EU
UNCLOS	United Nations Convention on the Law of the Sea
Verification	Any activity undertaken to check if a discharge took place at sea e.g. coastguard dispatch to the site. The definition of verification for the purpose of this report excludes inspections at ports.

EVALUATION

1. INTRODUCTION

This report presents the findings of the first evaluation of "*Directive 2005/35/EC on ship-source pollution and on the introduction of penalties, including criminal penalties, for pollution offences as amended by Directive 2009/123/EC"* (hereinafter "the SSP Directive" or "the Directive"). The evaluation is performed "back-to-back" with an Impact Assessment for the review of the Directive. The Directive is one of EU's initiatives aiming at less pollution to the sea from maritime transport.

Context

Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for pollution offences (amended by Directive 2009/123/EC to include criminal penalties) deals with **penalties for illegal discharges** of oil and noxious substances from ships into the sea. In this context, *illegal* means anything that does not meet the relevant International Maritime Organization (IMO) International Convention for the Prevention of Pollution from Ships (MARPOL) standards[1] .

As with other maritime legislation, incorporating such international obligations into an EU directive made the provisions actionable before the Court of Justice of the European Union (EU) and provided the conditions for better enforcement within the EU and for European seas. The text of the Directive stipulates that any discharges above the thresholds set in MARPOL Annexes I and II (the political priority in the wake of the **Erika** accident) are *infringements* under the SSP Directive leading to penalties. Prosecution and penalising of the offender rests with the EU Member States and is carried out in accordance with their judicial system.

The imposition of penalties for pollution offences from ships finds its origin in international law. The United Nations Convention on the Law of the Sea (UNCLOS[2]) specifies that a State can impose penalties for pollution committed by a foreign vessel in case of major damage to the coastal state or if the flag state in question has repeatedly disregarded its obligations of enforcement.

The SSP Directive has a requirement that penalties must be "effective, proportionate, and dissuasive". Such requirement is often set in EU legislation. It also provides for a clearer liability regime than the one laid down at international level as it specifies when a person can be convicted – for example, the master of the ship responsible for an illegal discharge committed carelessly.

The SSP Directive was the impetus behind the creation of the CleanSeaNet service (CleanSeaNet), which is the Earth observation, satellite oil spill detection service hosted by the European Maritime Safety Agency (EMSA). Combined with the EMSA vessel

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[1] MARPOL lays down detailed standards for the discharge of waste and residues at sea. According to MARPOL, (intentional) operational discharges are permitted within strict discharge standards. For example for MARPOL Annex I, it is illegal if a ship discharges oil with content above 15 ppm (parts per million). For MARPOL Annex II, it is illegal if a ship discharges noxious liquid substances at a rate exceeding the maximum rate for which the underwater discharge outlets were designed.

[2] United Nations Convention on the Law of the Sea (UNCLOS) is an international (IMO) Convention agreement that establishes a legal framework for all marine and maritime activities.

traffic monitoring capability, it helps Member States carry out their duty of identifying ship-source pollution at sea. CleanSeaNet sends an alert to a Member State when a possible spill is detected by satellite surveillance. Member States are responsible for confirming if the spill actually took place and for identifying the polluter. Approximately, 5% of possible spills alerted by CleanSeaNet were subsequently confirmed to be mineral oil spills when verified by Member States.[3] CleanSeaNet has also offered effective assistance to Member States for the monitoring of accidental pollution during emergencies, such as when spills occur during a rescue operation in bad weather.

Illegal discharges from ships however are only one of the sources of pollution to the marine environment. Globally, around 35% of oil that enters the sea comes from regular shipping operations. Around 45% of oil is input from land-based sources with municipal/industrial effluents and from routine oil rig operations, 10% from accidents of oil tankers, 5% natural sources, 5% undefined sources.[4]

In line with the SSP Directive, illegal discharges committed with intent, recklessly or serious negligence which lead to the deterioration of the quality of the seawater are classified as criminal offences. The Directive does not require that all infringements must follow the criminal regime. Administrative penalties are used more often for cases of ship-source pollution. Member States apply administrative penalties in most (approximately 80%) of their cases.[5]

The SSP Directive was the first piece of EU legislation regulating criminal penalties for environmental offences. Later in 2008, the EU adopted a horizontal instrument, the Environmental Crime Directive[6] which did not cover ship-source pollution. A new Environmental Crime Directive has been proposed by the European Commission in 2021 that is currently being discussed by the co-legislators.[7] The revision includes – for the first time – ship-source pollution as a criminal offence. This is a legal requirement stemming from specific provisions on the harmonisation of criminal law in the Treaty on the Functioning of the EU. Consequently, ship-source pollution administrative penalties will remain within the scope of the SSP Directive but criminal penalties will be covered by the new Environmental Crime Directive.

The SSP Directive is closely linked with the Directive on Port Reception Facilities[8] for ship waste. When the directive on Port Reception Facilities was revised in 2019 with stronger rules and better monitoring of ships' waste delivery at ports, there was a call by the co-legislators to review the SSP Directive, to avoid a situation whereby more illegal discharges would be found at sea if nothing was done to expand the scope of the SSP Directive to match the scope of the Port Reception Facilities Directive and make the penalties proportionate in this context.

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[3] An approximation based on CleanSeaNet data from 2021. See Figure 14

[4] World Ocean Review (2014) WOR 3 Marine Resources – Opportunities and Risks. Oiling the Oceans

[5] An approximation based on the findings of this evaluation exercise. See Figure 12

[6] Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law (OJ L 328, 6.12.2008, p. 28–37)

[7] European Commission proposal for a revised Environmental Crime Directive https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12779-Environmental-crime-improving-EU-rules-on-environmental-protection-through-criminal-law_en

[8] Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC (OJ L 151, 7.6.2019, p. 116–142)

The SSP Directive incorporates international standards for ship-source pollution stipulating that any discharges above standards set out in MARPOL Annexes I and II are infringements. The SSP Directive also supplements the international framework with elements that complement the MARPOL regime. More specifically:

- It established EU competence in criminal matters for ship-source pollution as international law does not specify the type of penalties to be applied (UNCLOS Art 230).
- It offers an EU liability regime[9] for ship-source pollution penalties across the EU.
- It was the impetus behind the creation of an EU tool for satellite surveillance (CleanSeaNet).

Purpose and scope of the evaluation

The purpose of the evaluation is an assessment of the performance of all substantive provisions of the SSP Directive across the European Union. There is no legal requirement to evaluate the legislation included in the Directive. However, there was an explicit call by the co-legislators[10] to review the SSP Directive in the Port Reception Facilities Directive. This is the first evaluation performed for this Directive.

The Sustainable and Smart Mobility Strategy[11] underlined the importance of a sustainable maritime transport sector. The Communication on the **European Green Deal**[12], followed by the 2021 Communication on the Zero Pollution Action Plan[13], stressed the need for preventing pollution. The revision of the SSP Directive is included in the Sustainable and Smart Mobility Strategy (action 14).

As mentioned in the roadmap combined evaluation /Inception Impact Assessment[14], the evaluation work examines the effect that the SSP Directive has had in terms of reducing illegal discharges from ships and how it contributed to the number of convictions or the level of imposed penalties in the Member States. The focus is on potential problems encountered with the implementation and application of the Directive and whether illegal discharges/pollution offences related to polluting substances covered by this Directive have been subject to effective, proportionate and dissuasive penalties in Member States, and what the effect has been on overall ship-source pollution in the EU.

Against this background, the Commission has carried out an evaluation of the SSP Directive, in a back-to-back manner with the Impact Assessment for the review of this

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[9] For the purpose of this report the 'EU liability regime' relates to persons (natural or legal) being held accountable for an illegal discharge - for example, the company or master of the ship is responsible for an illegal discharge if committed carelessly or with the intention to cause damage, subject to the exceptions from liability provided by MARPOL.

[10] Recital 13 of the Port Reception Facilities Directive: *"In order to align Directive 2005/35/EC of the European Parliament and of the Council to the relevant MARPOL Convention provisions on discharge norms, the Commission should assess the desirability of a review of that Directive, in particular through an extension of its scope."*

[11] COM(2020) 789 final - Sustainable and Smart Mobility Strategy – putting European transport on track for the future; FLAGSHIP 2 –Creating zero-emission airports and ports, point 27. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0789

[12] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en#documents

[13] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52021DC0400

[14] European Commission (2021) Combined Evaluation Roadmap/Inception Impact Assessment. Revision of the Directive on ship-source pollution

Directive. More specifically and in line with the Better Regulation Guidelines, this evaluation analyses:

- effectiveness, to assess the actual changes the Directive has triggered, particularly in view of its original objectives;
- efficiency, to assess the actual costs relative to the actual benefits of the implementation, and whether there is potential for simplification and increasing cost-efficiency;
- relevance, to assess whether the overall problem analysis and related objectives are still adequate and how the policy context has evolved;
- added value to the EU, its impact beyond what reasonably could have been achieved by national and regional policies; and
- coherence of the regulatory framework, regarding both the internal coherence and the coherence with other key legislation and policy initiatives at EU level.

The methodology used to carry out the evaluation was developed with the support of an external study and in line with the Better Regulation Guidelines and Toolbox[15]. The methodology is detailed in Annex II of this report. An evaluation matrix (provided in Annex III of this report) was elaborated to answer the evaluation questions. It identified relevant operational questions, indicators, research tools and data sources. Figure 1 provides a summary of the scope of the evaluation and of the Directive.

Figure 1. Scope of the evaluation of the SSP Directive

Evaluation period	From 2007 (deadline for national transposition in line with Article 16) until 2021 (year of most recent data analysed)
Legislative acts	SSP Directive: Directive 2005/35/EC and amendment to the Directive adopted in 2009 (Directive 2009/123/EC). The Commission did not adopt any implementing or delegated acts under this Directive.
Geographical scope	1) internal waters, including ports, of a Member State; 2) territorial sea of a Member State; 3) straits used for international navigation; 4) exclusive economic zone (EEZ) or equivalent zone of a Member State; 5) high seas i.e. sea areas beyond the jurisdiction on any State
Ship type	All ships, irrespective of their flag, with the exception of warships, naval auxiliary and ships for government non-commercial use which are outside the scope of the Directive
Pollutant type	MARPOL Annex I (Regulations for the Prevention of Pollution by Oil) and MARPOL Annex II (Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk)
Illegal discharge type	The Directive covers both accidental and (intentional) operational illegal discharges. However, an accidental spill would not lead to a penalty under the SSP Directive if all precautions had been taken e.g. accident caused by stormy weather with precautions taken.

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

The following sources of information were used for this evaluation:

- Information from stakeholder consultation activities. These included an online public consultation, targeted surveys, interviews, stakeholder meetings and a dedicated stakeholder workshop;
- A review of existing literature including relevant EMSA reports and datasets; and
- Member States implementation reports i.e. reporting under Article 12 of the Directive.

The limitations inherent to the methodology were:

- serious data gaps on the verification and prosecution of ship-source pollution incidents;
- no centrally collected data concerning the number of infringements and penalties imposed at national level. When available, the data is fragmented, not collected according to uniform standards or inaccurate. It presents several gaps and some conflicting information;
- lack of consistently reported data concerning the period prior to the introduction of the Directive;
- lack of consistently reported data on the implementation of the Directive i.e. reporting under Article 12 of the Directive;
- low rate of feedback logged by Member States in CleanSeaNet;
- scarce data on costs and no quantitative information on benefits; and
- little stakeholder feedback on the implementation of the Directive. The response rate has been low and information received very limited[16].

The Commission chose a "back-to-back" approach (i.e. the evaluation and impact assessment have been launched at the same time) in order to: (i) provide an overview on the existing poor evidence-base, (ii) signal the limitations caused by the data gap and, in parallel, to (iii) provide the basis for more robust reporting arrangements in the future as well as (iv) pragmatic measures to address the existing and still relevant problem addressed by the Directive.

The data available for this evaluation was not sufficiently robust to make a complete ex-post assessment for all Member States. There is no representative data available on the indicators to measure the success of the Directive (e.g. the increased proportion of identified pollution incidents of Annex I and II type subject to penalties). However, despite the limitations, this evaluation gives a comprehensive snapshot of the existing information and provides a consistent analysis of the implementation of the Directive. For some evaluation criteria, in particular relevance and coherence, the evidence gathered was satisfactory. Availability and quality of data was a challenge affecting in particular

[16] There were only 30 replies to the open public consultation and 25 replies in the form of the response to the evaluation survey. 31 interviews took place although the timeline was extended and multiple rounds of interview requests were sent.

the assessment of the effectiveness and efficiency criteria. Where quantitative data was available, it was used to make estimations and was complemented by stakeholder opinions and positions, although stakeholders were not very responsive to the various consultation activities. Information gathered from different sources, including input from stakeholders were compared and triangulated whenever possible. In the case when available data and literature was limited (e.g. linked to the assessment of efficiency and efficiency criteria), consultation responses were relied upon to answer the evaluation questions and are indicated throughout this report.

2. WHAT WAS THE EXPECTED OUTCOME OF THE INTERVENTION?

2.1. Description of the intervention and its objectives

The purpose and general objective of the Directive was to incorporate international standards for ship-source pollution into Community law and to ensure that **persons responsible for discharges of polluting substances to sea are subject to penalties**, including criminal penalties. Addressing oil spills from ships was the main environmental priority in the wider policy framework in the 80-90s and continued in years 2000-2005. The underlying reason for the Directive was the public concern caused by two significant accidents involving the tankers Erika (1999) and Prestige (2002), shown in Figure 2 as well as the frequent occurrence of tarballs on the EU's beaches in the 1990s.

Figure 2. The trigger of the intervention

Ship name	Year	Location	Oil lost [tonnes]
tanker MV **Erika**	1999	Off Brittany, France	20,000
tanker MV **Prestige**	2002	Off Cape Finisterre, Spain	63,000

Source: EMSA and EEA. The European Maritime Transport Environmental Report (EMTER) (2021)

The main **problem** mentioned in the Explanatory Memorandum of the proposal[17] was that ships of dubious quality loaded with polluting cargoes continue to sail in European waters and continue to cause pollution of the sea through accidents and (intentional) operational discharge, without the responsible parties being **adequately penalised** for it.

The root causes of the problem listed at the time of preparing the Directive were:

- the occurrence of illegal discharges to the sea due to a lack of adequate port reception facilities for waste[18];
- discharges not always detected in time;
- the enforcement of the MARPOL rules is not consistent within and between EU

[17] European Commission (2003) Explanatory Memorandum in Proposal for a Directive of the European Parliament and of the Council on ship-source pollution and on the introduction of sanctions, including criminal sanctions, for pollution offences, COM/2003/0092 final - COD 2003/0037

[18] The problem of the lack of adequate port reception facilities for waste from ships was addressed by the Directive on Port Reception Facilities.

Member States;

- even if a discharge was detected and traced to a particular ship, the offence was rarely brought to justice and if it was, there was frequently lack of sufficient evidence to secure a conviction.
- even where an offender was convicted, many States implemented rather light penalties for this kind of offence, sometimes only imposed on the master of the ship, rather than the ship-owning company, whose instructions the master may follow.

There was a **need to prevent marine pollution** caused by ships especially to prevent oil spills. The key problem that the intervention was intended to solve was that many ships discharging pollutants illegally did not face penalties. Such situation, therefore, did not discourage other ships from polluting EU waters. One of the reasons why polluters were rarely penalised was that Member States had limited capacity to effectively detect and verify cases of ship-source pollution.

The objectives of the intervention are in line with Sustainable Development Goal (SDG) 14 which covers safeguarding marine and coastal ecosystems by preventing and reducing marine pollution. SDG 14.1 includes the goal of preventing and significantly reducing marine pollution of all kinds. The Directive also contributes towards SDG 3 ("Ensure healthy lives and promote well-being for all at all ages") and SDG 16 ("Peace justice and strong institutions").

The Directive was designed to address the missing link between the cause of the pollution into the sea and the accountability of the persons responsible for it. To address the needs and solve the problem, the following specific **objectives** were pursued:

- harmonise among Member States the enforcement of the international rules i.e. the MARPOL Convention;
- ensure that Member States effectively prosecute persons responsible for illegal discharges to the sea and apply effective, proportionate and dissuasive penalties;
- ensure cooperation and exchange of relevant information in the context of the detection, verification and prosecution of ship-source pollution.

To achieve the objectives, actions were needed across the law enforcement chain as depicted in Figure 4.

Figure 3. Law enforcement chain for the SSP Directive

The **expected achievements** of the Directive were the improvements in the response of Member States:

- detection of the illegal discharges from ships;
- identification of offenders; and
- prosecution leading to penalties.

The success of the Directive was seen as developing a harmonised approach in all Member States towards the infringement definition and penalties. This could bring increased coordination and cooperation of Member States by exchange of information on the verification of incidents and better support for collecting the necessary evidence. The intention was also to provide the legal basis for the European Maritime Safety Agency (EMSA) to engage in monitoring/surveillance activities for ship-source pollution.

In practice, the above-mentioned actions were ultimately expected to ensure that Member States:

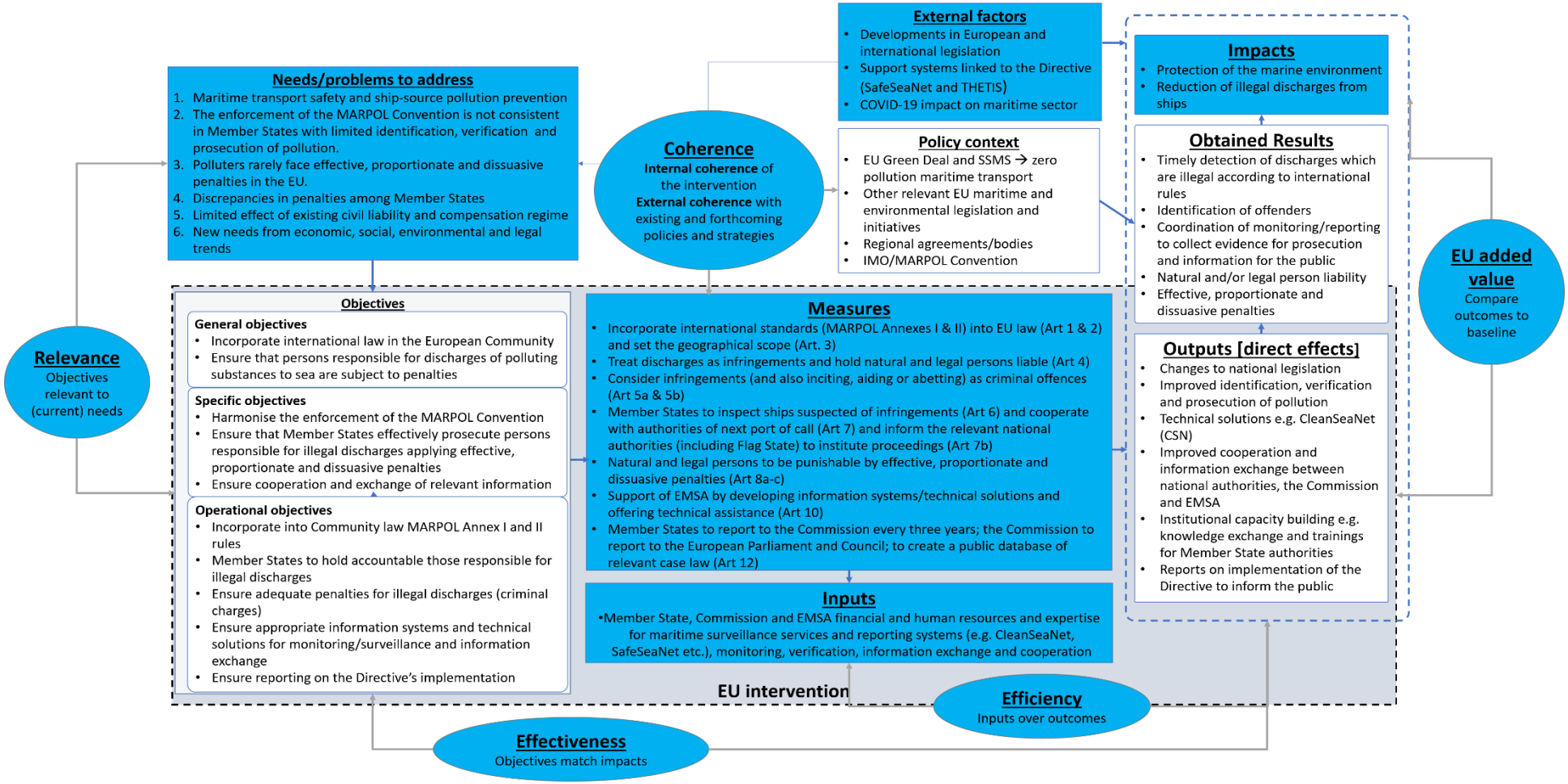
- treat illegal discharges as infringements in a harmonised way (i.e. imposing effective, proportionate and dissuasive penalties);
- have in place strong surveillance processes with modern technical solutions and information exchange mechanisms supported by EMSA.

The expected outputs were changes to the national legislations i.e. harmonising natural or legal person liability and penalty provisions and improved response i.e. law enforcement activities in Member States (detection, verification and prosecution of polluter). It was also intended to increase the cooperation between Member States by institutional capacity building (e.g. knowledge exchange and training for authorities) and by offering EU-wide technical solutions and the support of EMSA. Those outputs should be achieved on a consistent basis across the EU while taking into account the specific characteristics of the judicial systems of the Member States.

The intervention logic is presented in Figure 4. The implementation of the Directive (measures) should lead to specific outputs as well as impacts, reflecting the objectives of the Directive. The identified outputs represent the expected direct outcomes of the measures and obligations of Member States as defined in the Directive. The results and their impacts should be in line with the specific and general objectives of the Directive.

To sum up, the actions taken as a result of this intervention should support Member States in timely detection of illegal discharges and identification of polluters. It should foster verification (e.g. evidence collection) and principally increase effective prosecution and penalising.

Figure 4: Intervention Logic of Directive 2005/35/EC



Source: Ricardo (2023), Evaluation support study

2.2. Points of comparison

The counter-factual scenario estimates the likely developments in absence of this Directive over the evaluation period (2007-2021) and takes into account the methodological limitations mentioned in Annex III and section 1, including no centrally collected key data concerning the number of prosecutions.

When proposed, the Directive was not accompanied by an Impact Assessment. Therefore, the definition of the relevant points of comparison and the counter-factual scenario cannot be based on an Impact Assessment baseline. The definitions are consequently based on multiple sources (described in Annex II) that provide an assessment of the situation at the time of the adoption of the Directive and the expected outcomes.

The **counter-factual scenario** estimates the following developments:

- Member States would continue implementing the international rules for Annex I and II of the MARPOL Convention to varying extent with regional and national differences. Some Member States would have taken less action within their legal frameworks. See more details under the point of comparison on '*Provisions on infringement and penalties in national legislation*'.

- There would have been less technical means for surveillance as well as less electronic tools available for Member States to use. Cross-border communication, information collection and sharing would have been limited. See more details below under the point of comparison on '*Detection'*.

- In the absence of the Directive that mandates Member States to ensure that an appropriate inspection is undertaken in port[19] in case of suspicion that illegal discharge took place (Article 6), the usage of the existing EMSA-managed tools: SafeSeaNet (maritime surveillance) and THETIS (vessel inspection) would have been more limited. See more details below under the point of comparison '*Verification'*.

- The types of penalties imposed by Member States would have been similar to the current situation. See more details below under the point of comparison on '*Penalties*'.

Prior to the adoption on the Directive, the situation could be described as follows.

Provisions on infringement and penalties in national legislation: Prior to the adoption of the Directive, Member States defined infringements differently in each country even if all were parties to MARPOL.

The situation was characterised as follows:

- There was less emphasis on criminal penalties, as international law does not specify the type of penalties to be applied (UNCLOS[20] Art 230);

[19] Port State Control Directive (2009/16/EC)

[20] United Nations Convention on the Law of the Sea (UNCLOS) is an international (IMO) Convention agreement that establishes a legal framework for all marine and maritime activities.

- The focus was on illegal discharges in territorial waters, as international law supports non-monetary penalties for foreign vessels if wilful and serious pollution was committed in territorial waters (UNCLOS Art 230);

- Limited efforts were made on prosecuting foreign vessels as international rules stipulate that the flag State of the polluting ship shall be given priority in the investigation and penalty process (UNCLOS Art 228);

- Unintentional discharges committed with serious negligence were not explicitly included as being subject to administrative nor criminal offences.

***Detection*:** Member States mostly used aerial and coastal surveillance (e.g. surveillance aircrafts and Coast Guard patrol boats) to monitor pollution at sea because satellite surveillance was not well developed, costly and provided limited data. Prior to the adoption of the Directive in 2005, there were limited satellite services to support surveillance of the sea. In the Baltic and North Sea, partial satellite surveillance was performed and in the Mediterranean Sea, there were research pilot projects with limited timeframes.[21]

***Verification*:** At the time the Directive was adopted, Member States already cooperated to help each other in ship-source pollution verification. Member States used the existing maritime safety legislation and related tools: SafeSeaNet (maritime surveillance) and THETIS (vessel inspection) information exchange services developed by EMSA (see Figure 9). However, in the absence of the Directive, there was less coordinated pollution detection and less information exchange between Member States on pollution incidents leading, most likely, to less verification activities:

- the number of pollution incident reports (POLREPs) notified through SafeSeaNet would have most likely been smaller;

- the number of inspection requests submitted through THETIS related to suspected MARPOL infringements would have most likely been fewer.

Penalties: In the EU, there is a strong legal tradition to use administrative penalties for cases of ship-source pollution. Therefore, it is assumed that most convictions prior to 2005 were of administrative nature. There is insufficient data available, including from Member State interviews, on the proportion of administrative and criminal penalties imposed before the adoption of the Directive. Working under the assumption that the legal framework for the majority of Member States did not have the possibility to accommodate both administrative and criminal convictions, the share of criminal convictions most likely was lower across the Member States before the adoption of the Directive.

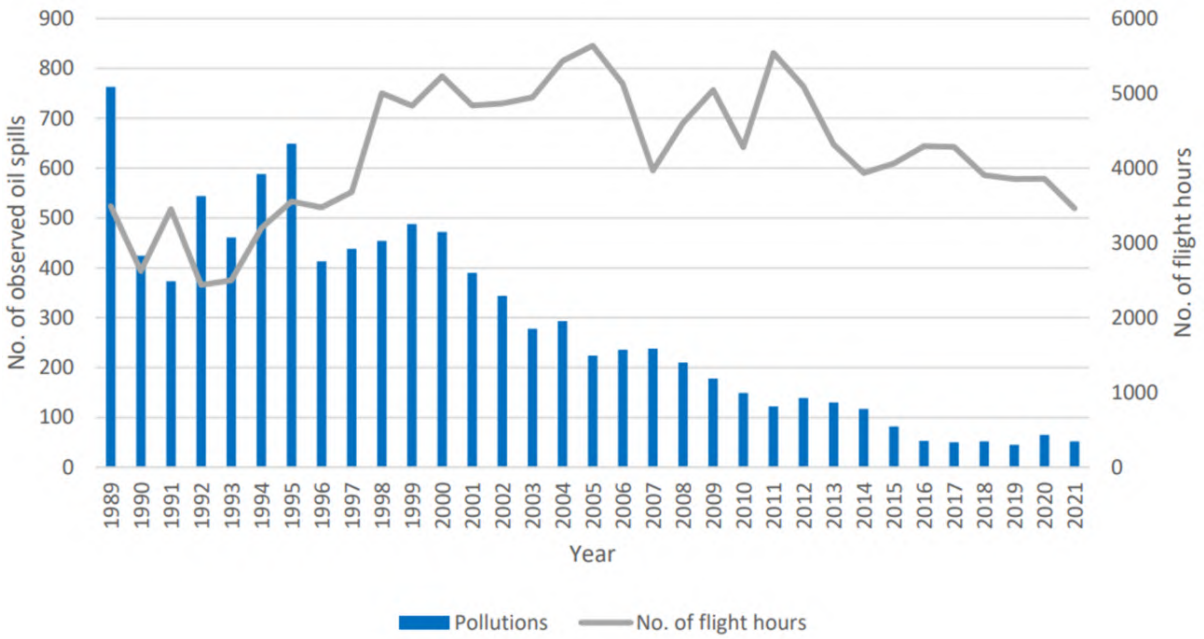
[21] Historic information from interviews with 3 Member States

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

3.1. Current state of play

The black lumps of oil, often washed up on beaches in the 1980s, are rarely seen in Europe nowadays. Oil pollution of European seas has decreased over the years as presented in the example in Figure 5.

Figure 5. The number of confirmed oil spills in the Baltic Sea during aerial surveillance by Member States (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden).



Source: HELCOM "Annual report on discharges observed during aerial surveillance in the Baltic Sea 2021"

NB. The MARPOL Convention brought the number of oil tanker disasters down worldwide in the 1980s. MARPOL paved the way for the introduction of double hull tankers. It is now mandatory for all new tankers to be fitted with a double hull, so that once a vessel is involved in a collision which penetrates the outer hull, the tanks inside generally remain intact and oil does not spill. Globally, the number of oil spills from tanker incidents or caused by technical failures or explosions on tankers has fallen in recent decades, despite a steady growth in the seaborne oil trade[22]. Other factors that contributed to the downward trend are improved safety procedures, increased awareness of ship operators and reputational risk that can occur to the ship owners when a ship is caught for illegal discharge.

The facts above on the reduction of oil pollution at sea sets the scene for the state of play in implementing the Directive. The evaluation could not answer the question on how the decrease of oil spills is related to the dissuasive effect of penalties for ship-source pollution. This could not be quantified due to serious data limitations and is not discussed in this evaluation report. However, it is expected that the Directive contributed to the reduction of oil spills in European seas to some extent by increasing the chances of a ship being caught when discharging illegally in European seas because of (i) satellite surveillance and (ii) other tools available to all Member States supporting cooperation between the Member States, (iii) by strengthening the national legislation – all leading to the end result of (iv) penalties being imposed and their dissuasive effect.

[22] World Ocean Review (2014) WOR 3 Marine Resources – Opportunities and Risks. Oiling the Oceans

Provisions on infringement and penalties in national legislation

The current state of play in implementing the Directive's legal provisions across the EU has been analysed with view to highlight the differences between Member States. With the Directive in place, all Member States transposed the provisions on infringements and penalties to their national legislation. All Member States adopted procedures for holding natural and legal persons responsible for illegal discharges. There were two cases of nonconformity investigated by the Commission - in 2009 (infringement against Greece[23]) and in 2010 (infringement against Ireland[24]). Both cases were closed in 2011. An overview on how each Member State transposed the provisions on infringement and penalties is presented in Figure 6. Due to different legal systems, some Member States do not provide for criminal liability for legal persons in their legislation e.g. in Belgium, Cyprus, Romania[25].

Figure 6. Implementation of the SSP Directive by the Member States - differences in penalty procedures foreseen for ship-source pollution in the European Union.

		Administrative penalties		Criminal penalties		
Member State	**Approach towards infringement**	**Minimum**	**Maximum**	**Minimum**	**Maximum**	**Max imprisonment (years)**
Austria	Landlocked country with no major sea-going fleet, hence horizontal national penalty provisions apply.					
Belgium	Both are applied - administrative penalties considered faster to apply but criminal penalties provide more options to execute.	€ 200	€ 16,000,000	€ 12,000	€ 16,000,000	10
Bulgaria	Cannot apply criminal penalties to legal persons. No criminal cases have been applied in the last 10 years.	€ 75,000	€ 250,000	€ 5,000	€ 25,000	20
Cyprus	Administrative prevail. No criminal case applied in the last 10 years	Not specified	€ 85,430	Not specified	€ 855,000	5
Denmark	Administrative or criminal fines and imprisonment	€ 3.350	unlimited	€ 3,350	unlimited	10
Germany	Apply criminal penalties to natural persons	€ 200	€ 50,000	Not specified	Not specified	10
Estonia	Both options are possible but administrative	€ 10	€ 16,000,000	€ 10	500 times offender's daily income	5

[23] In 2009, Greece's legislation conformity with the SSP Directive was challenged with regard to Article 3 (insufficient definition of infringement outside Greek territorial waters) and Article 6 (inspection of suspect ships). The case was closed in 2011.

[24] In 2010, Ireland's legislation application with respect to the SSP Directive was challenged with regard to Article 8 (liable persons other than the owner and master of ship) and was closed in 2011.

[25] EMSA (2011) Study on the Implementation of Ship Source Pollution Directive 2005/35 in the EU Member States, not available online

		Administrative penalties		Criminal penalties		
Member State	**Approach towards infringement**	**Minimum**	**Maximum**	**Minimum**	**Maximum**	**Max imprisonment (years)**
	procedures are usually applied. There has been no criminal case until now.					
Ireland	Natural persons are not penalised.	€ 3.000	€ 15,000,000	€ 3,000	€ 15,000,000	5
Greece	Administrative or criminal fines and imprisonment. Both procedures are in use.	€ -	€ 2,000,000	€ -	€ 300,000	10
Spain	Both administrative and criminal approaches in use.	€ -	€ 5,400,000	€ -	€ 5,400,000	12
Finland	Both are applicable but in practice administrative procedures are typically used due to the difficulties of applying criminal procedures.	€ 4,278	€ 850,000	€ 4,6	linked to offender's income	6
France	Both options are used but administrative prevail and only a small number of cases result in criminal procedures.	€ -	€ -	€ -	€ 15,000,000	10
Croatia	Both administrative and criminal approaches in use.	€ 660	€ 40,000	€ -	linked to offender's income	15
Czechia	Landlocked country with no major sea-going fleet, hence horizontal national penalty provisions apply.					
Hungary	Landlocked country with no sea-going fleet, hence penalty provisions are not applicable.					
Italy	Both administrative and criminal approaches in use.	€ 10,000	€ 1,239,300	€ 10,000	€ 1,239,300	10
Latvia	Administrative penalties prevail.	€ 140	€ 140,000	€ 140	€ 140,000	10
Lithuania	Legal persons can liable for administrative and criminal penalties.	€ 2,500	€ 3,900,000	€ 2,500	€ 3,900,000	10
Luxembourg	Landlocked country with a sea-going fleet - horizontal national penalty provisions apply.	n/a	€ 1,500,000	n/a	€ 1,500,000	5
Malta	Administrative and/or criminal charges possible, but mostly administrative charges applied.	€ 12,000	€ 100,000	€ 12,000	€ 1,500,000	30
Netherlands	Only criminal charges applied. No possibility for administrative	€ 3	€ 900,000	€ 20,500	€ 870,000	6

		Administrative penalties		Criminal penalties		
Member State	**Approach towards infringement**	**Minimum**	**Maximum**	**Minimum**	**Maximum**	**Max imprisonment (years)**
	penalties in Dutch Law.					
Poland	Administrative and/or criminal charges possible, but only administrative charges have been applied.	€ 25	€ 1,240,000	n/a	€ 1,240,000	5
Portugal	Administrative and/or criminal charges possible, but only administrative charges have been applied.	€ -	€ -	€ -	€ -	-
Romania	Administrative and/or criminal charges possible, but only administrative charges have been applied in the last 10 years	€ 2,000	€ 10,000	n/a	€ 750,000	20
Slovenia	Administrative and/or criminal charges against both natural and/or legal persons liable.	€ 417	€ 750,000	€ 417	€ 750,000	6
Slovakia	Landlocked country with no major sea-going fleet, hence horizontal national penalty provisions apply.					
Sweden	Administrative or criminal fines and imprisonment.	n/a	€ 247,400,000	n/a	€ 247,400,000	2

Source: Ricardo (2023) Evaluation support study
The levels of penalties are an approximation summarised for the purpose of providing an overview on the scale.

Detection – state of play

The Directive (Article 10) was the legal basis for the creation of the CleanSeaNet service - the European satellite-based oil spill monitoring and vessel detection service, as summarised in Figure 7. It allowed Member States to perform pollution detection activities using a combination of satellite and aerial surveillance.

Figure 7. CleanSeaNet service developed for the purpose of the SSP Directive

CleanSeaNet is the European satellite-based oil spill and vessel detection service which offers assistance to participating States for:

- identifying and tracing oil pollution on the sea surface;
- monitoring accidental pollution during emergencies;
- contributing to the identification of polluters.

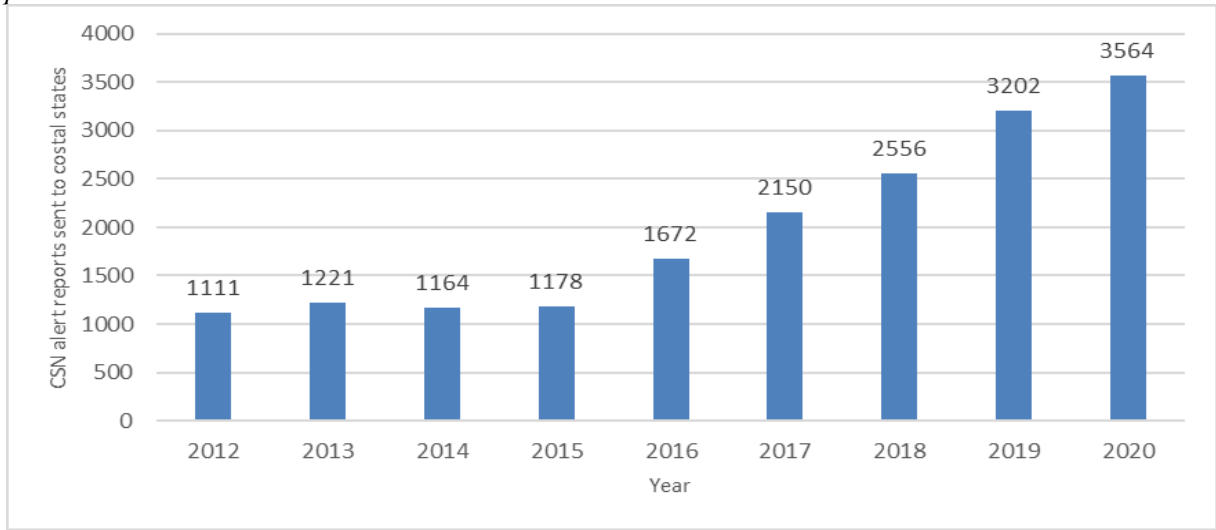
When a possible oil spill is detected, an **alert report** is sent to national authority users in "Quasi Real Time" (QRT) (e.g. 20 minutes for images up to 150 000 km^2). The user may visualise the satellite image together with

vessel traffic information in EMSA's portal. In 2021, the CleanSeaNet service delivered over 7 000 images from different SAR satellites, with over 1.4 million km² monitored and detected over 7 000 possible spills.

Source: EMSA CleanSeaNet service portal

CleanSeaNet provides information when a potential spill is detected, although it cannot confirm the spill, nor identify the polluter. The steady increase in the quality and quantity of satellite images has resulted in an increased number of spill alerts. Figure 8 shows that the number of CleanSeaNet alerts reported to Member States tripled over the last decade. This does not mean, however, that the pollution tripled.

Figure 8. The increase in CleanSeaNet alerts notifying the Member State authorities of a possible pollution event



Source: Ricardo (2023) Evaluation support study, based on EMSA CleanSeaNet services data. Alert reports sent to Member States and Norway and Iceland.

The accuracy of the CleanSeaNet service has improved thanks to semi-automatic data quality checks and better algorithms, so smaller spills can now be detected. With more information on potential spills, Member States can better target their verification activities. Upon receiving a CleanSeaNet alert, the national authority decides how to respond to a possible spill (e.g. whether to send an aircraft or patrol vessel to verify it and confirm that it was in fact a pollution incident).

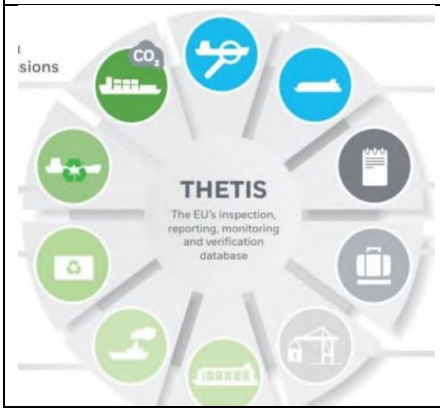
Verification – state of play

National enforcement practices for verification vary across EU Member States depending on resources allocated to the sector. Aerial surveillance capacity (helicopters and sensor aircraft - manned or unmanned) differs - some Member States record high numbers of flight hours e.g. France, while others do not have aerial surveillance means e.g. Romania. Specialised national bodies perform aerial surveillance activities e.g. the Maritime Police, the coastguard, the Military/Armed Forces. Surveillance activities reported by Member States include deployment of military or coastguard patrol boats for coastal and port surveillance and use of multi-purpose monitoring flights. Also, merchant vessels or commercial airlines report to the authorities on potential incidents e.g. in Italy, France and Cyprus, supplementing national

verification.[26] Data from the North Sea[27] and Baltic Sea[28] show that a high number of flight hours and verification activities result in more information on whether an oil spill occurred. As presented in Figure 5 based on the example of the Baltic Sea, verification activities are carried out systematically by Member States. This data does not go as far as providing information on the offender, however it shows the number of pollution incidents detected and confirmed. The verification capacity of the Member States of the North Sea and Baltic Sea are higher than those for the Mediterranean or Black Sea areas. There is no relevant data available for the latter and the verification efforts presented above are not representative for the whole of the EU. Nevertheless, the supporting evidence shows that verification activities are being undertaken and national assets are being deployed for this purpose.

The data shown in the figures below (Figure 10 and Figure 11) indicates that Member States exchange information between each other, with the use of THETIS and SafeSeaNet. More information on the two tools is provided in Figure 9. This supports the verification process and facilitates collecting the evidence to identify the polluter as to ultimately impose a dissuasive penalty. Thanks to combining information from CleanSeaNet on the location of the possible pollution and SafeSeaNet on the vessels that were in the vicinity, the Member State obtains information on possible polluters.

Figure 9. EMSA-managed tools relevant to ship-source pollution incidents

SafeSeaNet The European Union Vessel Traffic Monitoring and Information system EMSA	**SafeSeaNet** is a vessel traffic monitoring and information system, established under the Directive establishing vessel traffic monitoring and information system (2002/59/EC) in order to enhance, • maritime safety; • port and maritime security; • marine environment protection • efficiency of maritime traffic and maritime transport. Member States can notify pollution incident reports (POLREPS) by this EMSA tool.
	**THETIS** is a vessel inspection database established under the Port State Control Directive (2009/16/EC) consulted by Port State Control authorities to: • assist in selecting the right vessels for inspection with Ship Risk Profiles and Priority; • provide statistics on inspection results and performance. Member States can request an inspection in the next port of call by introducing an inspection request

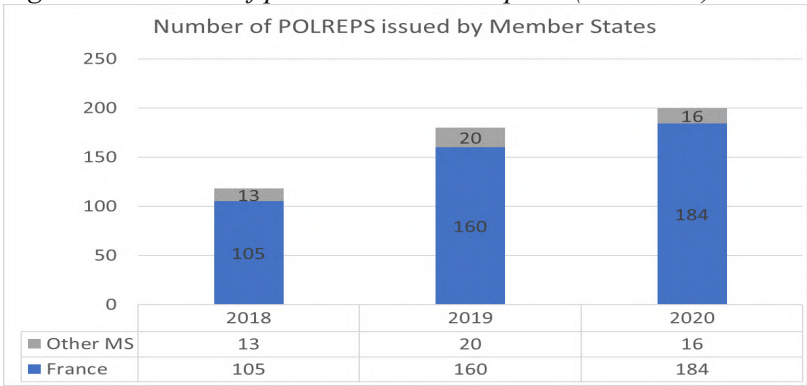
[26] Information collected during evaluation interviews with the above-mentioned Member States.
[27] Bonn Agreement (2021) Annual Report on Aerial Surveillance 2020
[28] HELCOM (2022) Annual report on discharges observed during aerial surveillance in the Baltic Sea 2021

	(overriding factor message in THETIS).

Source: EMSA THETIS and EMSA SafeSeaNet

The use of pollution incident reports (POLREPs) to communicate pollution events of common interest is not fully exploited by Member States. As seen in Figure 10, the majority of pollution incident reports submitted in SafeSeaNet comes from one Member State.

Figure 10. Number of pollution incident reports (POLREPs) issued in SafeSeaNet by Member States

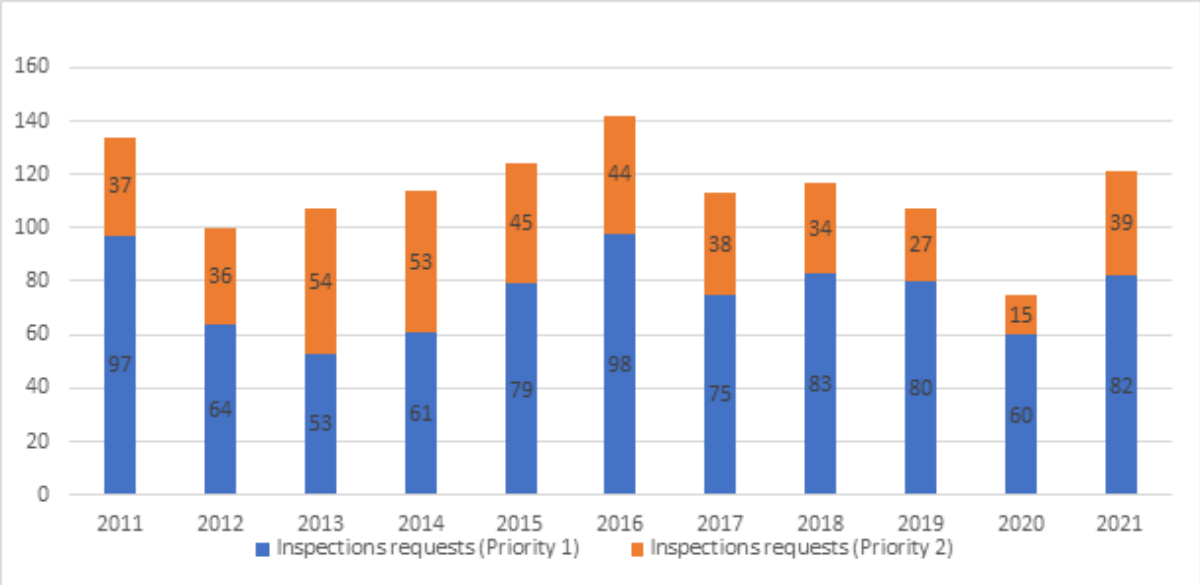


Source: Ricardo (2023) Evaluation support study

Next, despite the increased number of CleanSeaNet alerts (CleanSeaNet provides information when a potential spill is detected, although it cannot confirm the spill, nor identify the polluter. The steady increase in the quality and quantity of satellite images has resulted in an increased number of spill alerts. Figure 8 shows that the number of CleanSeaNet alerts reported to Member States tripled over the last decade. This does not mean, however, that the pollution tripled.

Figure 8), the number of inspection requests in ports was relatively constant over time, in case of suspicion that a discharge of Annex I or II pollutants took place (Figure 11).

Figure 11. Number of inspection requests registered in THETIS by Member States with regard to MARPOL Annex I and II incidents



Source: Ricardo (2023) Evaluation support study

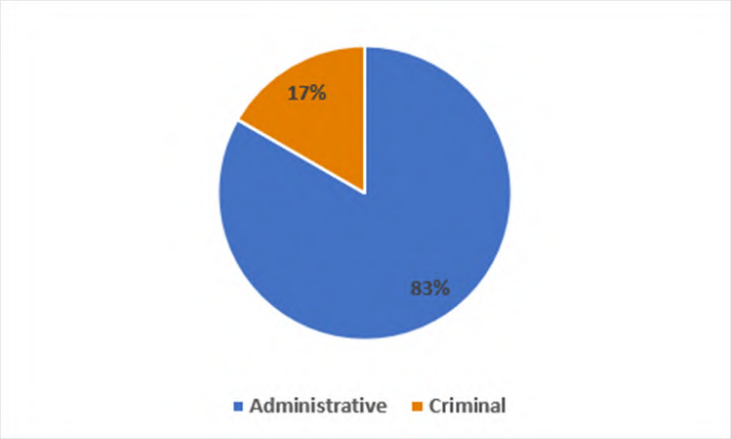
NB. Priority 1 triggers in THETIS the request for an inspection at the next port of call for the suspected ship. Priority 2 means that the ship is targeted for an inspection but not necessarily at the next port of call. It will be inspected within a certain time window depending on the ship's profile.

National verification activities (e.g. port state control inspections or checks on spot by means of aircraft) and their achievements in identifying the offenders is not evaluated in this report because such activities of Member States fall outside of the scope of the evaluation (i.e. were already carried out before the Directive was adopted). The evaluation thus focuses on the EU angle of cooperation and data exchange by presenting the activity of Member States in using SafeSeaNet and THETIS for ship-source pollution incidents.

Penalties – state of play

Infringements which lead to the deterioration of the quality of the seawater are classified as criminal offences if committed with intent, recklessness, or serious negligence (Article 5a and 5b). The Directive however does not specify that all infringements must follow the criminal regime. Administrative penalties are also possible under the SSP Directive. There are no centrally collected data concerning the type of procedures followed when imposing penalties, however, based on the interviews with Member States conducted as part of the evaluation, it was estimated that the majority of penalties imposed are administrative, as presented in Figure 12.

Figure 12. Estimated share of administrative and criminal penalties for ship-source pollution in the EU.



Source: Ricardo (2023) Evaluation support study; NB. Estimation based on data and qualitative input on the frequency of administrative and criminal penalties applied over the period 2012-2021 from 8 Member States (PL, NL, IT, RO, EL, LV, FI, CY, DE) and Norway. This figure is indicative and points to the facts that the requirement of the Directive to impose criminal penalties is not fulfilled in the EU.

Currently, most Member States rarely take the criminal route.

- Criminal cases are frequently considered burdensome as they usually involve lengthy and resource-consuming processes, which Member State authorities cannot always undertake due to a lack of resources and expertise.

- Administrative penalties are often considered by Member States authorities to provide timely outcomes with reduced resource allocation.

Although the Directive includes provisions on criminal penalties, the practices in Member States did not change as compared to prior the adoption of the Directive. Administrative penalties were and are used more often than criminal penalties.

4. EVALUATION FINDINGS

This chapter presents the assessment of the five criteria (effectiveness, efficiency, coherence, EU added value and relevance) as to understand if the SSP Directive met the expectations of 2005, achieving EU-wide benefits.

4.1. To what extent was the intervention successful and why?

In this section, the success of the Directive over the evaluation period is assessed in terms of the extent to which it achieved its objectives effectively, efficiently, and in coherent way. The evidence provided is based on the detailed analysis by criterion in the evaluation matrix and answers to the evaluation questions documented in Annex III.

As concerns **effectiveness**, we investigated if the SSP Directive has been successful in achieving its intended objectives and present it under three headings following the law enforcement chain (detection, verification and prosecution).

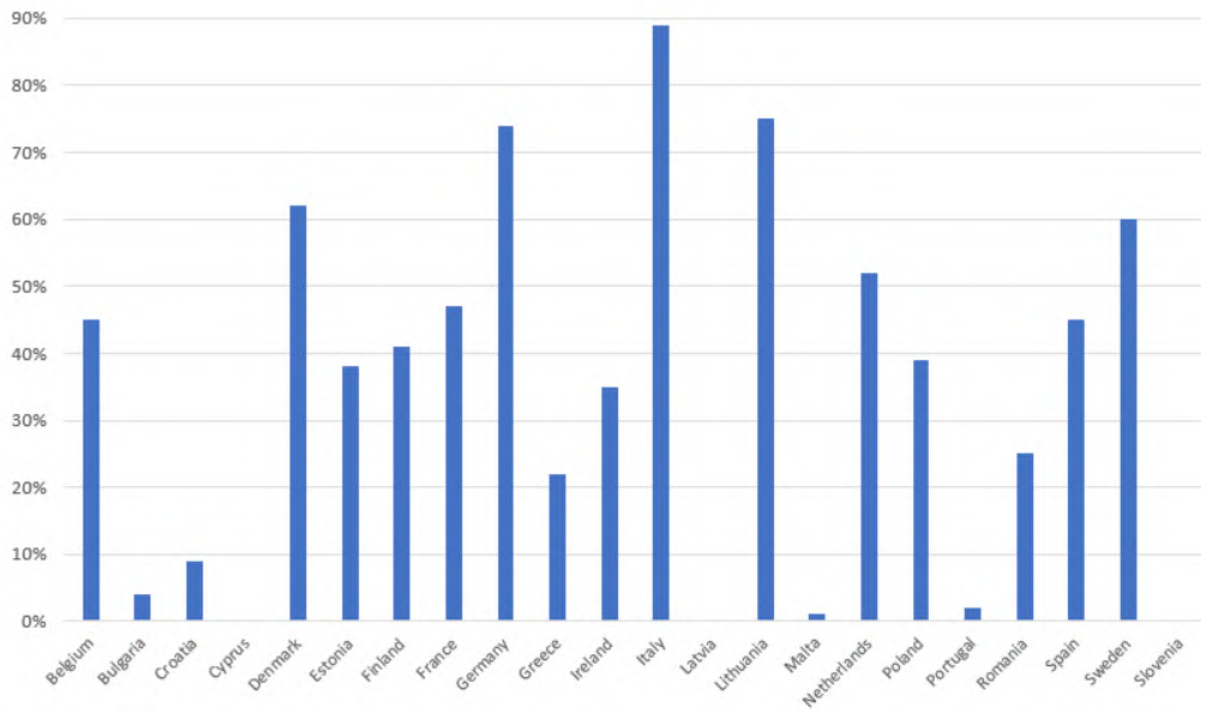
Detection - findings

The starting point (to reach the objective of ensuring that persons responsible for illegal discharges are subject to penalties) is an effective system to support Member States in detecting the polluting substances at sea.

Satellite surveillance provides information on possible spills and is available to all Member States thanks to the EU-wide CleanSeaNet service. CleanSeaNet does not inform the Member State that a spill occurred nor does it indicate which ship is the offender. Member States identify the pollution, collect the evidence on the incident and confirm the offender. The satellite surveillance tool offers timely, yet limited information on the possibility of a spill based on which national authorities make a decision on the need for verification.

Member States do not always verify the CleanSeaNet alerts. An authority may decide that it is not operationally relevant to follow up the alert or does not have the means to perform the verification. The feedback of national authorities to information provided in CleanSeaNet is limited. It is uncertain whether Member States do not verify the possible spill or verify it and do not log the result of their verification in CleanSeaNet. As shown in Figure 13, only a few Member States log their feedback data in CleanSeaNet for most of the alerts they receive.

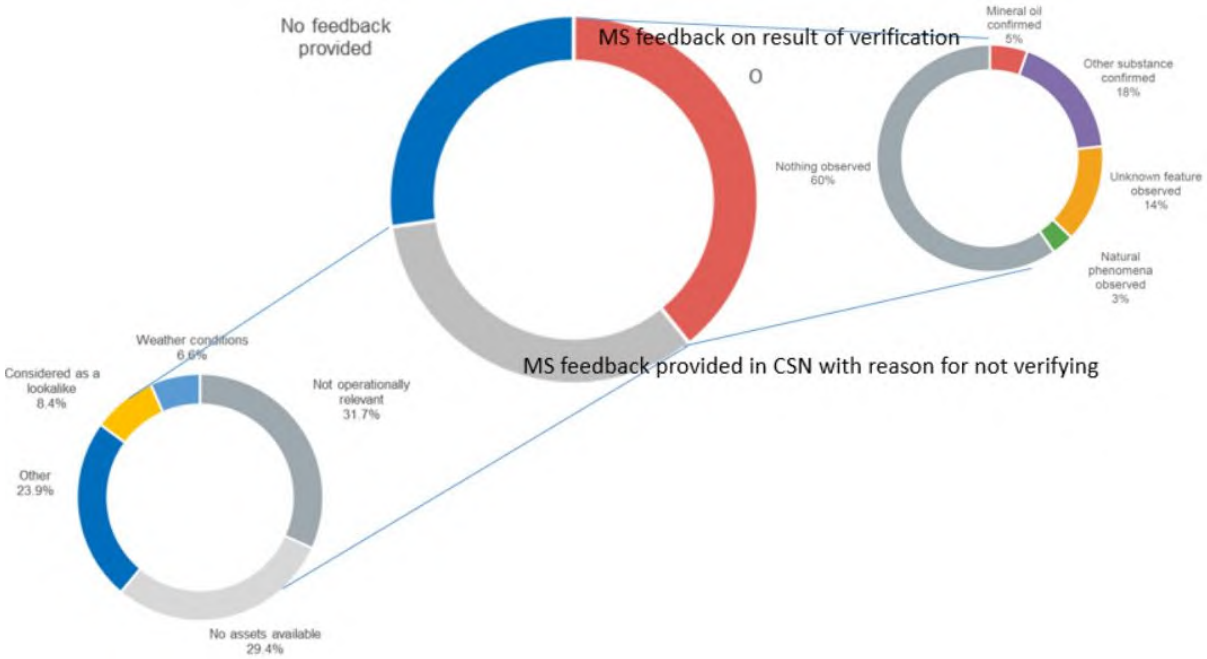
Figure 13. Percentage of verification feedback for CleanSeaNet alerts 2021



Source: CleanSeaNet data https://emsa.europa.eu/csn-menu/detections-feedback-data.html

The confirmation of an oil spill based on an alert received (or rate of logging feedback in CleanSeaNet) is limited. Figure 14 shows that Member States log feedback data in CleanSeaNet for approximately 40% of all alerts (1/3 of all cases is a record that verification did not take place providing the reason why there was no verification). Out of all cases verified, a mineral oil spill was confirmed for 5% of the cases and in 37% of cases, actual polluting substances have been confirmed on-scene when checked by Member States. This shows that although satellite surveillance is an effective tool informing about a possible pollution incident, it leads to only some confirmed cases.

Figure 14. Feedback to CleanSeaNet alerts in 2021



Source: Based on data from CleanSeaNet service

Summing up, if more Member States verified of their CleanSeaNet alerts then most likely the deterrent effect would be higher. The limited Member States feedback in CleanSeaNet makes it difficult to analyse the reliability of the tool.

Verification- findings

This section focuses on the EU angle of cooperation and data exchange on verification by presenting the achievements of Member States in using SafeSeaNet and THETIS for ship-source pollution incidents. It also explores the processes and practices related to national verification including the inspection and control regimes. The national approaches to verification are (i) analysis of ship-based information to identify the suspected offenders (SafeSeaNet), (ii) checks on spot by means of aircraft or patrol boats (national assets), (iii) inspecting ships in port to obtain evidence on non-compliance with the MARPOL (THETIS and THETIS EU).

Inspections of ships in ports happen within the regime of the Port State Control Directive (2009/16/EC) (reported in THETIS) and Port Reception Facilities Directive (2019/883/EU) (reported in THETIS EU). The tools developed by EMSA i.e. CleanSeaNet, SafeSeaNet[29], THETIS[30] and THETIS EU have worked together to support Member State collaboration and to improve their capability to follow up possible pollution events and attribute them to specific ships/offenders. Thanks to the SSP Directive and the use of CleanSeaNet, there is

[29] Example: through SafeSeaNet, the ship geographical position in the area of the pollution event in the time might provide the identification of possible polluters to the Member State authorities. This information is provided automatically in the CleanSeaNet report to Member States.

[30] Example: through THETIS, Member State authorities have access to past port State control inspection findings for a particular ship and can use this information to assess the risk. They can also use THETIS EU to see if the particular ship left the waste in question in the previous port's of call, Port Reception Facility. Member States can use THETIS to request another Member States authority e.g. next port of call to inspect the suspect ship.

more information available for the Member States and more opportunities to use SafeSeaNet and THETIS systems for following up pollution events. In the period 2011-2021, on average over 100 inspection requests were logged annually in THETIS arising from suspicions of possible illegal discharges of MARPOL Annex I and II substances, pointing to the cooperation of Member States in inspections of pollution incidents (Figure 11).

There is a general consensus among Member State authorities interviewed (12 respondents) that cooperation and information exchange activities led to improved capacity towards the identification of the pollution. Also, seven of the industry responses (out of 13) to the public consultation indicated that the Directive has contributed to some extent to increased cross-border cooperation between Member States law enforcement and judicial authorities. On the other hand, it was noted during the interviews that Member State authorities do not use the existing EMSA tools to their full extent. Not all Member States record their activities in CleanSeaNet, SafeSeaNet and THETIS. If more Member States provided their records then most likely the effectiveness of discouraging ship-source pollution would be higher.

Penalties- findings

The Directive regulates penalties hence the core measure of success for this Directive is captured based on Article 8 - Member States ensuring that an infringement/ pollution offence is punishable by effective, proportionate and dissuasive penalties. This section concentrates on the trends and extent to which the objectives of the Directive were achieved from the perspective of penalties issued by Member States for illegal discharges at sea. The increased proportion of illegal discharges subject to penalties should be analysed to report the success of the Directive. Such analysis is however restricted as there is a serious information gap relating to penalties applied by courts in Member States and no tangible evidence nor centralised statistics on the number and type of penalties imposed. This information is not always collected by Member States, and is often decentralised especially with regards to criminal penalties (i.e. individual courts within a Member State). Furthermore, although Member States have a general reporting obligation (Article 12), they rarely report on penalties to the Commission.

The data available to the Commission is not representative. Only eight Member States reported within the past five years to the Commission (Figure 15). The limited data shows that not more than 50 cases of ship-source pollution are identified annually per Member State and not more than 12 are prosecuted. It can be therefore assumed that the requirement of the Directive to impose penalties is rarely met. Most of the Member State authorities interviewed agreed that pollution incidents rarely or never result in penalties[31]. This suggests deficiencies in the effectiveness of the penalty procedures in place.

Figure 15. Summary of data reported by Member States in the period 2015-2020

Member State which submitted a report	Average number of offenders/ships identified annually	Average number of offenders/ships prosecuted annually
France	5.8	No data
Poland	18.0	12.1
Latvia	2.7	2.7

[31] For administrative penalties: Member State authorities interviewed (6 out 11 MS authorities and 8 out 12 MS authorities who provided input for natural persons and legal persons, respectively) agreed that pollution incidents do not frequently or never result in penalties. For criminal penalties: Member State authorities interviewed (8 out 9 MS authorities and 9 out 10 MS authorities who provided input for natural persons and legal persons, respectively) agreed that pollution incidents do not frequently or never result in penalties.

Finland	16.2	3.2
Romania	1.7	1.7
Cyprus	1.3 (only data for 2020, 2018, 2015)	2 (only data for 2020)
Germany	50.8	No data
The Netherlands	30	No data

Source: Reports submitted to the European Commission under Article 12 reporting obligation by Member States in 2015-2020.

The reason for the limited information on the number of prosecutions is not a result of the lack of a common definition of infringement. On contrary, one of the successes of the Directive is providing a common legal framework for infringements.

Ten (out of 16) Member State representatives, who took part in the interviews and surveys, indicated that the definition of infringement in the Directive is appropriate. It leaves flexibility for national authorities. The assessment on the type of offence (criminal or administrative) is usually done on a case-by-case basis in accordance with national rules, as each case has different circumstances of offence to consider. In practice, both regimes (criminal or administrative) work together to complement each other.

Although the definition of infringement is perceived as non-problematic, deficiencies in effectiveness may originate from the lack of the definition of "deterioration of the quality of water" in the Directive which marks when criminal prosecution applies and when to trigger the administrative procedure. Based on literature analysis and interviews with the Member States, concepts of "minor cases" (Art 4(1) and 5a(2)) and the "deterioration in the quality of water" (Art 5a(2-3)) are not interpreted in the same way by all Member States.

To conclude on penalties, there are divergent approaches among Member States in the types of penalties applied and not enough data on the number of prosecutions and penalties imposed. There is limited information on whether the penalties applied are effective, proportionate and dissuasive.

Conclusion on effectiveness. The success of the Directive in achieving its intended objectives has been limited. Although it incorporated international rules for ship-source pollution into EU law and Member States prosecute SSP offenders, there is limited data to show how effective the system is. The Directive resulted in the implementation of a successful tool for satellite surveillance (CleanSeaNet). This however does not solve the problem entirely because satellite surveillance accuracy is limited (to around 40%). Some aspects relating to verification could have been managed more effectively e.g. Member States could have been logging more feedback data in CleanSeaNet. The Directive has not achieved the anticipated outcome to its full when it comes to the prosecution of offenders.

Efficiency

Costs

As concerns **efficiency**, the costs produced by the Directive can be divided into the following categories[32]:

- **Adjustment costs**: costs incurred to adjust stakeholder activities to the requirements of the Directive.

[32] as defined in the Better Regulation Toolbox: Tool #56 Typology of costs and benefits

- **Administrative costs**: costs borne as a result of administrative activities performed to comply with administrative obligations included in legal rules.
- **Enforcement costs**: costs of activities linked to the implementation of an initiative such as monitoring, verification and prosecution.

Figure 16 below summarises these costs.

Figure 16. Summary of costs of the Ship-Source Pollution Directive

Cost categories	Who	Elaboration	Costs
Adjustment costs	EMSA	Resources required for EU training and knowledge sharing activities	**EUR 200,000** annually
		Costs of operating CleanSeaNet and sharing alerts with Member States	**EUR 5.17 million** annually
Administrative costs	Member State maritime authorities	Administrative costs related to reporting on the Directive application (Article 12)	**EUR 70,048** annually
Enforcement costs	Member State maritime authorities	Costs related to Member States logging feedback data on CleanSeaNet alerts	**EUR 105,470** annually
		Costs related to information exchange procedures – Member States uploading pollution incident reports (POLREPs) in SafeSeaNet and THETIS inspection requests	**EUR 13,000** annually
	Member State maritime authorities for national surveillance/ coast guard / port state authorities*	Costs for national aerial surveillance and other national pollution surveillance activities (patrol boats)	N/A*
		Resources devoted to ship inspections at ports	N/A*
		Costs of analysing and transmitting the collected evidence to the prosecutor	N/A*
		Costs related to prosecution	N/A*

Source: Ricardo (2023) Evaluation support study.

** The assumption for the purpose of the efficiency analysis is that costs of national verification and prosecution are not attributed to the Directive. The justification for this assumption is: 1) these costs existed before the adoption of the Directive, 2) to focus the evaluation on the added value of the Directive and 3) in order not to create a duplication with costs occurring for Member States as parties to MARPOL. For reference, Member States' annual verification costs are estimated at around EUR 10 million. Ship inspection annual costs by Member States are estimated at around EUR 4.5 million[33].*

The initiative did not impose administrative burden on citizens. For businesses (ship owners and operators), the administrative burden remained the same since it concerns the enforcement of existing rules set out at international level (by the MARPOL Convention) and the obligations of parties in this respect.

The implementation of the SSP Directive represents extra workload for the Member States. However, the costs for authorities and the level of administrative burden arising from the

[33] Cowi (2023) Impact assessment support study concerning possible revision of Directive 2009/16/EC on port State Control

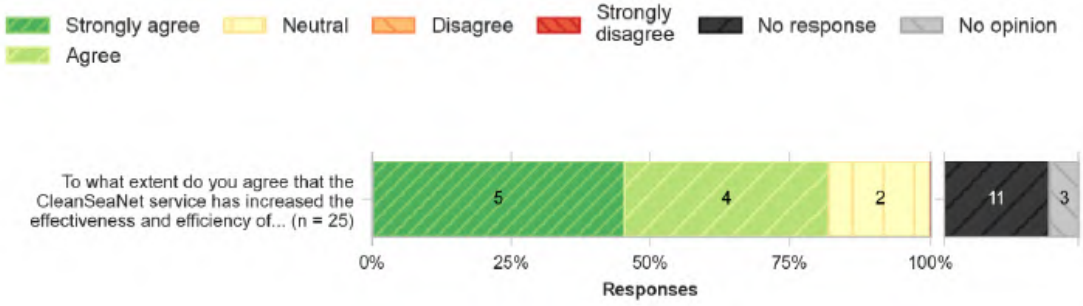
Directive are rather limited and appear to be justified by the benefits yielded in improved information exchange and cooperation between Member States. Eight Member State authorities (out of 14 interviewed) indicated that no change associated with costs have been observed. There has been no evidence of significant inefficiencies found in this evaluation.

The delivery of the CleanSeaNet service performed by EMSA is the main cost of the Directive. It would however be difficult to deliver the same results with lower costs of satellite surveillance services. Estimates show that market prices for similar satellite images can be between 2.7 and 7 times[34] more expensive than what EMSA is paying for them, considering:

- economies of scale - procurement of a system with common technical specifications for all EU Member States is less costly as EMSA, acting on behalf of the EU, has a strong negotiating power with commercial providers and the total cost of managing the service at EU level is lower than for national operators;
- no additional costs for the exchange of information between national databases to adapt to the transboundary nature of pollution monitoring;
- sharing of satellite imaging with all Member States via one system reduces the number of images needed and avoids duplications, therefore reduces costs.

Nine survey respondents (out of 11 as shown in Figure 17) have indicated efficiency gains in surveillance activities through the information obtained from the CleanSeaNet service and the use of the other EMSA information tools.

Figure 17. Targeted survey answer to question: To what extent do you agree that the CleanSeaNet service has increased effectiveness and efficiency of oil spill monitoring compared to the use of multiple national/regional systems?

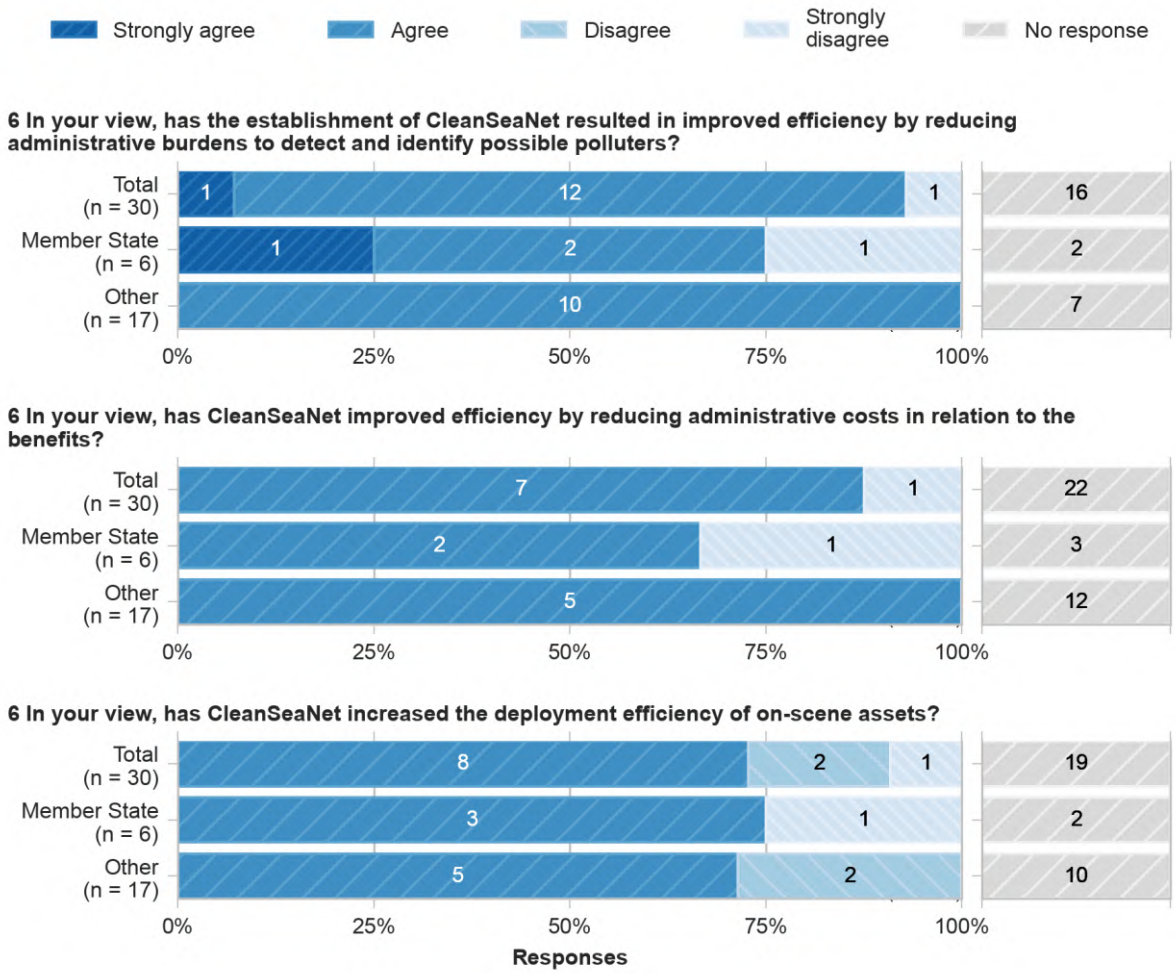


Source: Ricardo (2023) Evaluation support study, based on the evaluation targeted survey.

Ten Member State authorities interviewed (out of 14) agreed that CleanSeaNet has increased the efficiency of the process. Moreover, 13 out of the 30 respondents who in the public consultation answered this question, viewed CleanSeaNet as an efficient tool (most remaining respondents, including all industry representatives responded 'I don't know') as shown in Figure 18.

[34] See answer to question EQ10 in Annex III for calculations of the range between 2.7 and 7 times more expensive images without CleanSeaNet

Figure 18. Open public consultation on CleanSeaNet



Source: Ricardo (2023) Evaluation support study, based on open public consultation results

Based on input from Member States in the interviews, resources saved are however reported to be redirected to more targeted surveillance and enforcement activities, leading thus to increased benefits rather than reduced costs.

Benefits

The benefits of the Directive include an indirect impact on the improvement in marine environment protection from ship-source pollution as shown in Figure 19. This is achieved thanks to the deterrent effect of the penalties imposed and the surveillance activities which lead to enhanced detection of possible pollution incidents.

Figure 19. Summary of benefits of the Ship-Source Pollution Directive

Benefit categories	Stakeholders affected	Impact	Benefit
Environmental benefits	Society	• Potential decrease in the volume and number of illegal discharges of MARPOL Annex I substances from	Not quantified

Benefit categories	Stakeholders affected	Impact	Benefit
		ships in European seas • Potential decrease in the volume and number of illegal discharges of MARPOL Annex II substances from ships in European seas	
Social benefits (health & maritime safety, public health)	Society	• Unclear effect on the number of accidents and incidents with discharges of MARPOL Annex I and II substances • Potential indirect impact on the reduction of beach/ bathing site pollution by MARPOL Annex I and II substances • Potential indirect health benefits as a result of reduced pollution into the sea e.g. the consumption of fish products from European seas, quality of bathing sites	Not quantified

Source: Ricardo (2022) Evaluation support study

The benefits could not be quantified due to the lack of data on the extent to which the Directive provided for the dissuasive effect which in turn prevented ship-source pollution. With the lack of data on the proportion of identified pollution incidents of Annex I and II type subject to penalties and lack of data on the level of illegal discharges, the benefits were evaluated qualitatively.

An example of a potential, indirect benefit might be increased bathing water quality in the EU with an increase of bathing sites classified as excellent quality[35]. It is, however, not possible to estimate the impact of the Directive to this improvement due to the complex dynamics of pollutants and the various other existing sources of pollution.

In the absence of statistical data, the evaluation relies on consultation responses. Member States that took part in the interviews indicated that the Directive has prompted a reduction in the number of incidents of illegal discharges of substances regulated by MARPOL (11 out of 16 respondents interviewed). This confirms the qualitative conclusion that the Directive brought environmental benefits.

Conclusion on efficiency. The data on costs is scarce and no quantitative information on benefits is available. The benefits seem to overweigh the costs of the Directive, although they could not be quantified and thus the uncertainty associated to them is acknowledged. The EMSA tools proved to be efficient and beneficial for Member States in the context of achieving the objectives of the Directive. Increased satellite surveillance contributes to enhanced illegal discharge detection and indirectly to the prevention of ship-source pollution of the marine environment.

Coherence with EU pollution prevention legislation

[35] EEA reports for the Bathing Water Directive 2006/7/EC https://www.eea.europa.eu/themes/water/interactive/bathing/state-of-bathing-waters

As concerns **coherence**, the Directive is internally coherent and, in principle, coherent with other pieces of EU pollution prevention legislation.[36] A number of directives relate to prevention of ship-source pollution at seas. The details are presented in Annex III and an overview in Figure 20**Error! Reference source not found.**.

Figure 20. The framework of the existing legislation and initiatives relevant to ship-source pollution

WHO?	WHAT?
International Maritime Organisation (IMO)	United Nations Convention on the Law of the Sea (UNCLOS)
	Convention for the Prevention of Pollution from Ships (MARPOL)
European Union (EU)	Ship-Source Pollution Directive 2005/35/EC (SSP)
	Port Reception Facilities Directive (EU) 2019/883 (PRF)
	Port State Control Directive 2009/16/EC
	Vessel Traffic Monitoring and Information System Directive 2002/59/ EC (VTMIS)
	Sulphur Directive (EU) 2016/802
	Environmental Crime Directive 2008/99/EC (ECD)
	Marine Strategy Framework Directive 2008/56/EC (MSFD)
Regional Sea Conventions	OSPAR Convention
	Bonn Agreement
	Helsinki Convention - HELCOM
	Barcelona Convention – REMPEC
	Lisbon Agreement
	Bucharest Convention
Other initiatives of the transport sector and non-governmental organisations (NGOs)	Extended Producer Responsibility
	Clean-up and monitoring initiatives
	Awareness raising campaigns

- The SSP Directive is linked with the **Marine Strategy Framework Directive**[37] (MSFD) as it facilitates reaching the objective of Good Environmental Status of EU Marine Waters which is measured by descriptors. Ship-source pollution links to the descriptor 8 on contaminants. The MSFD is the main European legal instrument for protecting and conserving the marine environment and ecosystems. The MSFD enshrines in its rules the ecosystem approach to the management of human activities having an impact on the marine environment, integrating the concepts of environmental protection and sustainable use. Discharge of polluting substances from ships is one of the sources of pollution to the marine environment and there is a need to prevent it. The SSP Directive contributes to reaching the objectives of the MSFD by introducing dissuasive penalties for illegal discharge of polluting substances to sea.

[36] See answer to question EQ13 in Annex III

[37] 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 (OJ L 164 25.6.2008, p. 19)

- The SSP Directive works in synergy with the **Directive on Port Reception Facilities**[38] (PRF) for the delivery of waste from ships. Port reception facilities cannot work properly without a good instrument to discourage illegal discharge. When the PRF directive was revised in 2019 with stronger rules and higher monitoring of ships' waste delivery at ports, there was a call by the co-legislators to review the SSP Directive[39], which underlines the need for the extension of the SSP Directive's scope. In other words, an incoherence has been identified between the SSP Directive and the PRF Directive. The PRF Directive covers MARPOL Annex I-II and IV-VI waste and cannot be fully effective in the case that the SSP Directive covers only MARPOL Annex I-II, consequently an incoherence has been identified.

- The **Environmental Crime Directive**[40] (ECD), aims to protect the environment through criminal law and appropriate sanctioning providing for harmonisation of environmental offences in the case when Member States impose criminal sanctions. The ECD ensures that serious offences for pollution are addressed in a coherent way. The proposed new ECD will include for the first time in its scope ship-source pollution (i.e. it will cover those offences of ships that lead to the deterioration of the quality of water) and therefore coherence between the two is key. The SSP Directive will still remain relevant because it will cover administrative penalties for those offences that do not lead to the serious case of the deterioration of the quality of water and it will continue to provide the sectorial provisions on MARPOL. In parallel, criminal law enforcement and criminal penalties will apply through the ECD to most serious cases of ship-source pollution. For enforcement to be effective, the administrative and criminal enforcement regimes must be seen as interlinked parts of one system, which would consequently result in proportionate and dissuasive criminal and administrative penalties. The ECD and the SSP Directive would therefore be complementary. In other words, an incoherence has been identified between the SSP Directive and the new ECD Directive because the criminal provisions in the SSP Directive cease to be applicable and must be removed from the legal text.

- The **Environmental Liability Directive**[41] (ELD) is not relevant for items covered under the SSP Directive. The ELD covers obligations to prevent ex ante or remedy environmental damage caused, whereas the SSP Directive deals with ex post imposition of penalties to the person responsible for an illegal discharge. The SSP Directive does not deal with environmental compensation costs. The ELD does not deal with penalisation of behaviour. As such, the two instruments work separately from each other.

- The **Port State Control Directive**[42] (PSC) sets out common criteria for control of ships by the port State. The EMSA database for recording inspections (THETIS) is based on this directive. Ships that are suspected of safety or pollution infringement can be inspected

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[38] Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC (OJ L 151, 7.6.2019, p. 116–142)

[39] Recital 13 of the PRF Directive: *"In order to align Directive 2005/35/EC of the European Parliament and of the Council to the relevant MARPOL Convention provisions on discharge norms, the Commission should assess the desirability of a review of that Directive, in particular through an extension of its scope."*

[40] Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law (OJ L 328, 6.12.2008, p. 28–37)

[41] Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage

[42] Directive 2009/16/EC of the European Parliament and of the Council of 23 April 2009 on port State control (OJ L 131 28.5.2009, p. 57)

based on the rules set in the PSC Directive. Therefore, the PSC Directive is a necessary element for the SSP Directive to be effective and for the inspections in ports to take place.

- The **Flag State Control Directive**[43] provides rules for ship inspections and fleet oversight for Union flag State administrations which is relevant for preventing pollution of the marine environment in and outside of the Union. When stronger environmental rules become effective under the international conventions, the flag State responsibility to enforce them is automatically extended.

- The **Accident Investigation Directive**[44] provides rules on procedures to follow when investigating an accident of a vessel. With reference to maritime accidents, they do not only cause casualties and economic losses but can have a direct impact on the environment e.g. oil pollution hence link to the SSP Directive because such pollution is addressed through the SSP Directive.

- The **Vessel Traffic Monitoring and Information System Directive**[45]'s (VTMIS) purpose was to establish SafeSeaNet, the vessel traffic monitoring and information system with a view of enhancing the safety of maritime traffic and to contribute to a better prevention and detection of pollution by ships. Information from SafeSeaNet feeds into CleanSeaNet and therefore, the VTMIS Directive is a necessary element for the SSP Directive to work properly and for potential polluters to be identified effectively.

- The **Whistleblowing Directive**[46] lays down standards for reporting channels and the protection of persons reporting the breaches of Union law, including breaches on protection of the environment. There are synergies with the SSP Directive as whistle-blowers can be a relevant source of information on ship-source pollution.

With respect to the international regime, the scope of the SSP Directive relating to the groups of polluting substances covered is narrower than the scope of the MARPOL Convention. In other words, an incoherence has been identified between the SSP Directive and the MARPOL Convention in the evaluation. The SSP Directive covers only two out of six MARPOL Annexes.

Conclusion on coherence. No major inconsistencies have been identified between the Directive and other interventions in place at EU level, however there is a need to update the Directive, in particular due to the revision of the Port Reception Facilities Directive, in the context of the extended scope of the directive (to add the remaining MARPOL Annexes) and due to the revision of the Environmental Crime Directive in the context of removing criminal penalties. As for coherence with the international regime, a Directive covering all MARPOL

[43] Directive 2009/21/EC of the European Parliament and of the Council of 23 April 2009 on compliance with flag State requirements (OJ L 131, 28.5.2009, p. 132–135)

[44] Directive 2009/18/EC of the European Parliament and of the Council of 23 April 2009 establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and amending Council Directive 1999/35/EC and Directive 2002/59/EC of the European Parliament and of the Council (OJ L 131, 28.5.2009, p. 114–127)

[45] Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC (OJ L 208 5.8.2002, p. 10)

[46] Directive (EU) 2019/1937 of the European Parliament and of the Council of 23 October 2019 on the protection of persons who report breaches of Union law

Annexes would have been a better fit to meet the international objectives and expand the enforcement regime at EU level to penalise illicit conducts other than those covered under Annexes I and II of MARPOL. Such approach would be coherent with the objectives of the wider policy framework as reflected in the European Green Deal.

4.2. How did the EU intervention make a difference?

The key findings presented in this section are based on the detailed analysis of criterion "EU added value" documented in Annex III. Although international standards are in place, there are not enough mechanisms to enforce the MARPOL Convention. MARPOL outlines the rules to follow but enforcement responsibilities and the development of tools for dealing with non-complying ships is left to the IMO parties. If masters or ship-owners choose to ignore MARPOL provisions, the international community as such has few enforcement measures and heavily relies on national or regional enforcement. Hence, there is a need for the EU intervention. All respondents to the public consultation (22 respondents) agreed that EU action is important to have a framework for effective cross-border cooperation with regard to ship-source pollution. The serious data limitations of the evaluative work did not allow to quantify the added value of the SSP Directive because the data on the number of infringements and penalties imposed for ship-source pollution is limited.

The shipping industry questions the added-value of the Directive, given that the MARPOL Convention has already been ratified by all Member States. They raise concerns about the possibility to apply criminal offences to ships (e.g. criminal prosecution for accidental pollution caused by natural persons with serious negligence). In their opinion, it is sufficient that illegal discharges are subject to MARPOL rules. To analyse this stakeholder opinion, we searched for evidence concerning criminalisation and did not identify any case of unfair treatment of seafarers due to the implementation of the SSP Directive.

The SSP Directive was the political priority in the wake of the Erika and Prestige accidents. Such accidents and black lumps of oil, often washed up on beaches in the 1980s, are rarely seen in Europe since the adoption of the Directive. Therefore, the Directive has contributed to the improved situation to some extent.

In principle, Member States would be able to achieve the objective of incorporating the international standards for ships on their own because all of them have ratified the MARPOL Convention. However, the Directive offers more than MARPOL standards by (i) setting an EU liability regime to facilitate penalising the polluters and (ii) supporting the Member States in identifying the offenders through supplying information on possible spills (CleanSeaNet satellite surveillance). It also (iii) established EU competence in criminal matters for ship-source pollution as international law does not specify the type of penalties to be applied (UNCLOS Art 230).

For the purpose of this report the 'EU liability regime' relates to persons (natural or legal) being held accountable for an illegal discharge - for example, the company or master of the ship is responsible for an illegal discharge, if committed carelessly or with intention to cause damage, subject to the exceptions from liability provided by MARPOL. The Directive made a difference because it made it easier to prosecute an identified polluter in the EU.

CleanSeaNet made a difference because satellite surveillance capabilities would not have developed to the same extent without it. There would have most likely been more expensive versions of satellite surveillance in some Member States or regions and no satellite surveillance in other Member States, leading to discrepancies and enforcement gaps in the

EU. Moreover, cooperation between Member States would be more difficult without the common legal framework and systems offered by EMSA, facilitating the effective exchange and common visualisation of data. The EU law allows to create such entities and systems (SafeSeaNet, CleanSeaNet and THETIS). In particular, benefits are present for those Member States that have less surveillance tools for pollution prevention as well as weaker enforcement responses.

The opinions gathered during the open public consultation suggest some added value of the Directive: 9 respondents (out of 19) are of the opinion that, to some extent, compliance with MARPOL in the EU is higher thanks to the Directive; 7 respondents (out of 13) are of the opinion that, to some extent, cross-border cooperation in their county is higher thanks to the Directive.

Conclusion on EU added-value. The Directive, as an EU-level intervention, brought benefits, which would have not been possible at national or international level alone. The Directive was more efficient and effective in addressing ship-source pollution than MARPOL requirements and its implementing measures alone. The Directive offers added value by the additional elements to support the prevention of ship-source pollution. Specifically, the Directive clarified the regime for pollution penalties (i.e. EU liability regime) and introduced a common tool to all Member States to inform on possible spills (CleanSeaNet). The difference the SSP Directive made is minimising both the discrepancies in the EU as well as the enforcement gap for the implementation of the MARPOL Convention.

4.3. Is the intervention still relevant?

The findings presented in this section are based on the analysis of criterion "relevance" documented in Annex III (Evaluation matrix and answers to the evaluation questions). The consideration of the needs identified at the time of the adoption of the Directive and the assessment of its objectives has revealed that the problems still exist and the objectives of the Directive are still relevant. The objective of ensuring that persons responsible for discharges of polluting substances to the sea are subject to adequate penalties is still relevant. The consulted stakeholders agreed that the need for improved maritime transport safety and ship-source pollution prevention is still relevant, supported by 24 (out of 31) stakeholders interviewed and 23 (out of 25) responses to the survey. The Directive provides more consistency in the regulatory framework across Member States and the enforceable application of international standards in a more uniform and harmonised way.

As shown in section 4.1, the SSP Directive has achieved its intended objectives to a limited extent. The Directive has not achieved the anticipated outcome when it comes to the prosecution of offenders. Ships illegally discharging polluting substances to the sea still rarely face effective and dissuasive penalties. This conclusion has been made based on weak evidence mostly relying on stakeholder views obtained during the consultation exercise for this evaluation as well as scarce data reported by Member States to the Commission on the number of prosecutions.

This conclusion can be also supported to a certain extent by modelling results on waste delivered by ships to Port Reception Facilities. Regarding volumes of Annex I discharges, around 31,000 m^3 of oily waste (2.5% of the total for oily waste from ships) was likely

illegally discharged in EU waters over 2011-2015 period.[47] Regarding volumes of Annex II discharges, the quantities of substances transported and spilled are not available. Reported data shows that hazardous and noxious substance spills happen in European seas (e.g. HELCOM data of 2017[48]; OSPAR data of 2020[49]; REMPEC data of 2021[50]) but there is little overview on the extent and frequency of those spills at sea.

Moreover, there is a range of substances discharged by ships and not covered by the SSP Directive, which impact the Directive's relevance. These were discussed in the analysis of coherence (section 4.1) and include the remaining MARPOL Annexes for polluting substances discharged into sea as shown in Figure 21.

Figure 21. List of MARPOL Annexes

Annex	Substance	Entry into force	Within the scope of SSP Directive?
Annex I	Oil	1983	Y
Annex II	noxious liquid substances (HNS) in bulk	1983	Y
Annex III	harmful substances carried by sea in packaged form	1992	N
Annex IV	sewage from ships	2003	N
Annex V	garbage from ships	1988	N
Annex VI	air pollution from ships	2010	N

Source: IMO.

The relevant substances which are currently not covered by the Directive are:

- Annex III for harmful substances carried by sea in package form,
- Annex IV for sewage,
- Annex V for garbage and
- Annex VI discharge water from scrubbers to the sea.

Annex IV-VI substances have been identified as a rising concern in recent years. Figure 22 gives insight on the amounts of polluting substances associated with the shipping sector per group by showing how much is collected in Port Reception Facilities in the EU. The percentages in the figure show that the SSP Directive already covers the largest stream of

[47] This was estimated by calculating the gap between the level of oily waste delivered to EU Port Reception Facilities and the expectation for the generation of oil by ships (i.e. the gap between ships' delivered and expected volumes of oily waste). Based on the analysis of the volumes delivered to the port reception facilities of 29 EU ports carried out in the Port Reception Facilities Directive Impact Assessment support study by Ecorys (2017).

[48] HELCOM (2017) Annual report on discharges observed during aerial surveillance in the Baltic Sea

[49] OSPAR (2020) Assessment of the OSPAR Report on Discharges, Spills and Emissions from Offshore Installations 2009 – 2018

[50] REMPEC (2021) Study on trends and outlook on marine pollution, maritime traffic and offshore activities in the Mediterranean. REMPEC/WG.51/INF.3

polluting substances/waste (i.e. Annex I), however, the remaining types of waste (e.g. Annex V) are generated by ships in considerable amounts.

Figure 22. Types of waste collected in the EU port reception facilities in 2019

Waste	Oil (Annex I)	Noxious liquid in bulk (Annex II)	Substances in packages (Annex III)	Sewage (Annex IV)	Garbage (Annex V)	Discharge water from closed-loop scrubbers (Annex VI)
Amount [tonnes]	1,470,322	62,245	570	88,563	279,748	4,096
Percentage of total	77%	3.2%	0.3%	4.6%	14.7%	0.2%

Source: Reported by Euroshore members in 2021 and presented in EMSA and EEA report EMTER (2021)

The Directive is largely in line with the increasing prioritisation by EU citizens of protection of marine environment. The stakeholders consulted during the public and targeted consultations were generally in favour of broadening the scope of the Directive. In addition, 26 respondents (out of 51) in a stakeholder workshop organised on 22 September 2022 voted for the extension of the scope to cover Annex I-VI discharges into sea. In the public consultation, 23 (out of 28) respondents saw the need to expand the list of pollutants covered by the Directive (including 4 Member State authorities, 8 citizens, 7 NGOs, 2 academia and 2 industry stakeholder), while 5 respondents (all but one representing maritime industry) disagreed. The lack of Annex VI air emissions in the Directive has not been raised in any intervention at the stakeholder workshop organised as part of this evaluation. In contrast, one NGO emphasised in their position paper that discharge water from scrubbers is the major concern related to MARPOL Annex VI.

Conclusion on relevance. The overall problem addressed by the Directive and related objectives are still adequate. In addition, the policy context has evolved and adjustments are needed to adapt to the more ambitious agenda on pollution prevention. The substances covered by MARPOL Annex III-VI discharged into the sea are harmful to the environment and need attention as to deliver on EU policy objectives. The objective of the EU citizens and Member States "*to combat […] ocean pollution, including through […] promoting of environmentally friendly shipping by using best available technologies […]*" has been underlined in the outcomes of the Conference on the Future of Europe. The needs and objectives of the wider policy framework and the EU goal towards zero pollution, as reflected in the European Green Deal must be considered in this context.

5. WHAT ARE THE CONCLUSIONS AND LESSONS LEARNED?

5.1. Conclusions

The Commission has carried out an evaluation of the SSP Directive and has at the same time launched the impact assessment. The evaluation acknowledges that the data available was not sufficiently robust to make a complete ex-post assessment. It also acknowledges that the availability and quality of data was a challenge affecting, in particular, the assessment of the effectiveness and efficiency criteria. Stakeholders were also not very responsive to the various consultation activities. However, despite these limitations, the evaluation is a

comprehensive snapshot of the existing information and provides a consistent analysis of the implementation of the Directive.

The evaluation identified a number of issues as problematic:

- The current scope of the SPP Directive (i.e. MARPOL Annex I-II) does not cover all relevant polluting substances of the international regime e.g. garbage (Annex V) or sewage (Annex IV). The SSP Directive's scope is also not coherent with the scope of its sister directive - the Port Reception Facilities Directive.
- Member States do not always make use of the available EU tools (CleanSeaNet, SafeSeaNet, THETIS, THETIS EU) when carrying out their duties of verifying the pollution. They do not always use the information supplied by the digital tools or do not record their results in these tools. Information exchange between Member States is therefore incomplete.
- There is an unbalanced dissuasive effect of the penalties currently applied across the EU for ship-source pollution and the Directive's provisions on criminal penalties have become obsolete (due to the new Environmental Crime Directive).
- The reporting requirements are too general to allow for the collection of robust data on the implementation of the SSP Directive and to allow sharing them with a wider audience. The reporting provision is not adapted to the possibilities offered by digitalisation.

Figure 23 provides a summary of the conclusions per evaluation criterion.

Figure 23. Conclusions of the ex-post evaluation per criterion

Effectiveness	The success of the Directive in achieving its intended objectives has been limited. Although it incorporated international rules for ship-source pollution into EU law and Member States prosecute SSP offenders, there is limited data to show how effective the system is. The Directive resulted in the implementation of a successful tool for satellite surveillance (CleanSeaNet). This however does not solve the problem entirely because satellite surveillance accuracy is limited (to around 40%). Some aspects relating to verification could have been managed more effectively e.g. Member States could have been logging more feedback data in CleanSeaNet. The Directive has not achieved the anticipated outcome to its full when it comes to the prosecution of offenders
Efficiency	The data on costs is scarce and no quantitative information on benefits is available. The benefits seem to overweigh the costs of the Directive, although they could not be quantified and thus the uncertainty associated to them is acknowledged. The EMSA tools proved to be efficient and beneficial for Member States in the context of achieving the objectives of the Directive. Increased satellite surveillance contributes to enhanced illegal discharge detection and indirectly to the prevention of ship-source pollution of the marine environment.
Coherence	No major inconsistencies have been identified between the Directive and other interventions in place at EU level, however there is a need to update the Directive, in particular due to the revision of the Port Reception Facilities Directive, in the context of the extended scope of the directive (to add the remaining MARPOL Annexes) and due to the revision of the Environmental Crime Directive in the context of removing criminal penalties. As for coherence with the international regime, a Directive covering all MARPOL Annexes would have been a better fit to meet the international objectives and expand the enforcement regime at EU level to penalise illicit conducts other than those covered under Annexes I and II of MARPOL. Such approach would be coherent with the objectives of the wider policy framework as reflected in the European Green Deal.
EU-added value	The Directive, as an EU-level intervention, brought benefits, which would have not been possible at national or international level alone. The Directive was more efficient and effective in addressing ship-source pollution than MARPOL requirements and its implementing measures alone. The Directive offers added value by the additional elements to support the prevention of ship-source pollution. Specifically, the Directive introduced the regime for

	pollution penalties (i.e. EU liability regime) and introduced a common tool to all Member States to inform on possible spills (CleanSeaNet). The difference the SSP Directive made is minimising both the discrepancies in the EU as well as the enforcement gap for the implementation of the MARPOL Convention.
Relevance	The overall problem addressed by the Directive and related objectives are still adequate. In addition, the policy context has evolved and adjustments are needed to adapt to the more ambitious agenda on pollution prevention. The substances covered by MARPOL Annex III-VI discharged into the sea are harmful to the environment and need attention as to deliver on EU policy objectives. The objective of the EU citizens and Member States "*to combat* […] *ocean pollution, including through* […] *promoting of environmentally friendly shipping by using best available technologies* […]" has been underlined in the outcomes of the Conference on the Future of Europe. The needs and objectives of the wider policy framework and the EU goal towards zero pollution, as reflected in the European Green Deal must be considered in this context.

This first evaluation of the SSP Directive indicates that the same problem still exists in the EU. Ships illegally discharging polluting substances to the sea rarely face penalties. There is therefore the same need (as before the adoption of the Directive) to prevent illegal discharges of polluting substances from ships. Shipping is an international sector, operating in national, EU and international waters and regulated at the international as well as regional and national instances. Therefore, it has by nature a strong cross-border dimension. Further EU action could bring more cooperation between Member States on incidents of ship-source pollution as well as more modern digital solutions to support the detection of the pollution. Consequently, there could be more information at EU level to share with the public and policy makers as well as for the next evaluation of the SSP Directive.

5.2. Lessons learned

The key lessons learned of this evaluation support the need for strengthening of the policy framework at EU level by:

- Strengthening the common approach towards **penalising** the polluter for ship-source pollution;
- Accurate and timely support to the Member States by means of platforms for cooperation, digital tools and by providing reliable information on the **detection** of possible pollution - all for the purpose to support the **verification** by Member States and their identification of the offender;
- The **continuous improvement** in collection and exchange of data to inform the public, assess the effectiveness of this Directive and ultimately encourage ships to deliver waste to Port Reception Facilities and discourage ships from discharging pollutants to European seas.

ANNEX I: PROCEDURAL INFORMATION

Lead DG, Decide Planning/CWP references

The lead DG is Directorate General for Mobility and Transport (MOVE), Unit D2: Maritime Safety

DECIDE reference number: PLAN/2019/5432

This initiative was announced under item Action 14 in Action Plan to the Sustainable and Smart Mobility Strategy.

Organisation and timing

The impact assessment and the ex-post evaluation of the Ship-Source Pollution Directive were performed in a back-to-back manner (i.e. the evaluation and impact assessment have been launched at the same time) in 2021-2022.

The impact assessment and evaluation started in 2021, with a combined evaluation roadmap/ inception impact assessment published on 19 May 2021[51].

The impact assessment on a possible review of the Ship-Source Pollution Directive and the ex-post evaluation were coordinated by an Inter-Service Steering Group (ISG). The Commission Services participating in the ISG were: Secretariat-General, Legal Service, DG Environment, DG Climate Action, DG for Justice and Consumers, DG Maritime Affairs and Fisheries, DG for European Civil Protection and Humanitarian Aid Operations, the European External Action Service and the European Maritime Safety Agency (EMSA).

The Inter-Service Steering Group met 6 times: on 12 March 2021, 10 November 2021, 29 April 2022 and 21 June 2022, 14 September 2022 and 27 October 2022. It was consulted throughout the different steps of the evaluation and impact assessment process: notably on stakeholder consultation questionnaire and deliverables and on the draft Staff Working Documents. When necessary bilateral discussions were organised with the concerned services.

The revised draft Staff Working Documents, following the first opinion of the RSB, were consulted with the group during 17-28 February 2023 and comments from DG ENV and EMSA were received and taken into consideration when possible.

Consultation of the RSB

The draft impact assessment and evaluation reports were submitted to the RSB on 3 November 2022. They were discussed by the Board on 30 November 2022. Following a negative opinion of the RSB on 1 December 2022, a revised version of the two reports was submitted to the Board on 3 March 2023, followed by a positive opinion (with reservations) on 27 March 2023.

[51] European Commission (2021) Combined Evaluation Roadmap/Inception Impact Assessment. Revision of the Directive on ship-source pollution

The table below presents an overview of the RSB's comments and how these have been addressed.

RSB Comment – first opinion	How the comment has been addressed
1) The report should draw more on the evaluation findings to: (i) critically discuss how effective the SPP has been in reaching its objectives, (ii) explain what the key problems are, (iii) state which of those this initiative aims to tackle, and (iv) how they interact with each other (e.g. overall problem of ship source pollution versus specific implementation, enforcement and capacity problems). It should provide a clearer idea of the scale of these problems and the underlying problem drivers. On this basis, it should define more precisely its specific objectives, including by explaining upfront what the initiative aims to achieve over and above the MARPOL Convention and by indicating what success would look like. It should then identify the sets of measures that can effectively deliver on the objectives, thereby presenting a clearer intervention logic and overall revised narrative. Being clear on the expected level of ambition and on what success would look like, would help to manage expectations of this initiative.	a) More information on the effectiveness of the Directive, the problem definition and problem drivers has been added in sections 2.1 and 2.2 of the revised report, drawing also on the evaluation report. b) The specific objectives were reworded in section 4.2 (in particular specific objective 2 on supporting the Member States in their enforcement) and the narrative revised accordingly throughout the report. c) The context was reinforced in sections 1, 3.3 and 5.2 by clarifying what the proposal achieves over and above MARPOL (i.e. EU liability regime, satellite surveillance, types and levels of penalties). d) To clarify the expected level of ambition and what success would look like, sections 1, 2.1, 3.3, 4.2 were revised. Success is defined as an increased proportion of illegal discharges from ships subject to penalties.
2) The report should present a credible and dynamic baseline. It should include the effects of existing and upcoming relevant legislation, ongoing technological developments, recent geo-political events and insights from foresight. It should be clear how verification and prosecution costs associated with complying with the MARPOL Convention are reflected in the modelling.	a) Section 5.1 has been revised. It better explains that all possible efforts have been made to build a dynamic baseline. It also further explains how relevant legislation, technology etc. influences the baseline. b) Section 1, 3.2, 5.1 and 5.2 have been improved to better explain that costs of verification and prosecution of the incidents are not considered as costs of the SSP Directive (i.e. there were verification and prosecution costs prior to the adoption of the Directive and costs accounted for in this report do not create a duplication with costs occurring under MARPOL implementation).
3) The report should better explain the	a) Section 5.2 has been improved to better

RSB Comment – first opinion	How the comment has been addressed
rationale behind the option design. It should present alternative sets of measures that can effectively tackle the problems. It should better justify why the policy measure on further data integration and exchanges does not feature in the set of common policy measures. It should clarify whether a slightly different option design would affect outcomes, and if yes, how this has been reflected in the analysis.	explain the design of the three policy options and how the proposed measures can tackle the problem in three ways/ options (national enforcement focus, cooperation focus, EU harmonisation focus). b) The policy measure on the enhanced Integrated Maritime Services is now included in the set of common policy measures. This required adapting the numbering of the policy measures and the estimation of the costs and benefits. The description of policy options in section 5.2 was also revised.
4) The report should reflect the significant data limitations in assessing effectiveness, efficiency and EU added value, both in the evaluation conclusions and in the assessment and comparison of the options.	The evaluation and impact assessment reports were adapted to reflect the significant data limitations in particular, the description of the context in section 1 and 7 as well as in the conclusions of the evaluation.
5) The report should improve the analysis of the environmental impacts. The report should more clearly explain (and quantify to the extent possible) the environmental benefits of all measures. If further quantification is not possible, the report should provide a much more developed qualitative assessment of the environmental benefits, fully informed by the views of different stakeholder groups and independent expert judgement. This revised effectiveness assessment of the options in delivering the environmental benefits should then be reflected in the revised comparison of costs and benefits.	a) A qualitative assessment of the environmental impacts of all policy measures, by policy option, has been added in section 6.3. b) A summary of the views of different stakeholder groups has been added in Annex 2 for all proposed measures and in the main text of the report in footnotes. c) The comparison of costs and benefits in section 7 has been improved based on the above.
6) Options should be compared against the dynamic baseline scenario. The report should include a comparative table that ranks effectiveness, efficiency and coherence for each of policy options. The comparison of options should include the results of any additional analysis of the environmental benefits. Where adequate quantitative estimates are missing, a qualitative scoring should be done.	A comparative table that ranks effectiveness, efficiency, coherence, subsidiarity and proportionality was added in section 8.1. The qualitative assessment of the environmental benefits has also been reflected in the comparison of options.
7) The report should better justify the choice of the preferred option. The current analysis	Section 8.1 has been improved to better explain the choice of the preferred option. By

RSB Comment – first opinion	How the comment has been addressed
shows that the preferred option does not have the best Benefit Cost Ratio. However, the effectiveness and efficiency analysis does not adequately reflect the likely different environmental impact of each option. For the report to conclude on the preferred option, the justification should provide the key elements leading to this conclusion, acknowledge the limitation of the analysis and the fact that the choice of the preferred option is sensitive, even to small changes in policy options' design. In the absence of clear evidence on some proposed measures' effectiveness, in particular with respect to the scale of environmental impacts, the report should demonstrate why the preferred option is expected to deliver the expected positive results.	including the policy measure on the enhanced Integrated Maritime Services in the set of common policy measures, the preferred policy option shows now the best benefit to cost ratio. The environmental impacts have been better reflected in the effectiveness and efficiency assessment. Better justification of the choice in this section is based on the comparative table that ranks effectiveness, efficiency, coherence and subsidiarity/ proportionality. The description of the environmental impacts of each option was improved, by adding an assessment of the impacts by policy measure and by option.
8) Stakeholder and independent expert views and arguments should be presented more prominently and systematically throughout the main report. Notable disagreements between different categories of stakeholders on option design and the impact of some measures should be highlighted. In this regard, Annex II should be structured, summarised and feed into the main report.	More details are provided on stakeholders' views based on the consultation process. There were no notable disagreements between different categories of stakeholders on option design and the proposed measures.

RSB Comment – second opinion	How the comment has been addressed
(1) The report should summarise, upfront, the main problems, and the main aim of the revision in order to frame the overall narrative and intervention logic early in the analysis. It should explain clearly what its level of ambition is so that the effectiveness of the options on delivering on this ambition and tackling the problem can be clearly assessed.	A summary of the problem tackled by the Directive, the aim and the level of ambition of the initiative has been added in section 1 of the revised report. The remaining sections were revised punctually to link with this change.
(2) The discussion on the choice of the preferred option should make clear that this initiative is part of a broader framework of measures aiming to tackle the problem of ship source pollution in EU waters in working together. The report should explain whether the expected contribution of 0.5% reduction of	Section 8.1 has been revised to explain that a number of initiatives address together the problem of ship-source pollution in European waters. The reduction in the level of oil discharges is only indirectly linked to the envisaged ambition of the initiative. Section 6.3 was

RSB Comment – second opinion	How the comment has been addressed
oil waste discharge under the preferred option is in line with the envisaged ambition of the initiative.	revised to better explain this, and the limitations of the quantitative data to estimate the impacts on Annex II-VI pollutants.

Evidence, sources and quality

The impact assessment and evaluation are based on several sources, using both quantitative and qualitative data. This includes:

- Stakeholder consultation activities (see Annex 2);
- External support studies carried out by an independent consortium (lead by Ricardo). The external support studies will be published alongside this report.
- Commission experience in monitoring and implementing the Directive;
- Reports and information sourced by databases managed by EMSA.

The baseline scenario builds on the EU Reference scenario 2020 developed by E3Modelling with the PRIMES-TREMOVE transport model but also reflects the 'Fit for 55' package. This report also draws on the activities of the European Sustainable Shipping Forum, Waste from Ships subgroup, a temporary Commission's expert groups with Member States representation and industry stakeholders, which was established for the purpose of the revision of the Port Reception Facilities and SSP Directives.

ANNEX II. METHODOLOGY AND ANALYTICAL MODELS USED

Process

This evaluation was performed back-to-back with an impact assessment for the revision of the Ship Source Pollution Directive and was based on a methodology consistent with the Better Regulation Guidelines and Toolbox, with the support of an external study[52]. Further to publication of the combined evaluation roadmap/inception impact assessment[53] in May 2021, the Commission launched the process for contracting the external study. The terms of reference provided a draft intervention logic and draft evaluation questions to address the five evaluation criteria: relevance, effectiveness, efficiency, and coherence and European added value, developing the approach proposed in the evaluation roadmap.

This annex describes the methodology applied for the evaluation.

Methodological framework

The external study further developed the initial **intervention logic** following feedback received by the Commission in the inception phase of the study. The final intervention logic diagram (see Figure 4) helps capture the logic of the Directive and the causal chain linking objectives, activities, inputs and expected outcomes. It provides the basis for the development of the evaluation matrix and the specific criteria, indicators and data identified as relevant for each evaluation question.

An **evaluation matrix** (see Annex 3) was developed that sets out the following aspects for each evaluation question:

- Operational sub-questions: These break down the evaluation questions into smaller, measurable aspects.
- Indicators: Identifies the measures/metrics that correspond to each operational sub-question. These may be qualitative or quantitative.
- Evaluation approach and success/judgement criteria: Outlines the methodology used to answer the evaluation questions and form the conclusions. The success criteria indicate how the indicators were used to assess the performance of the Directive positively or negatively. These were used to answer the evaluation questions and form the conclusions.
- Potential data sources: Sources of data and information used to inform the indicators. As far as data was available, information was triangulated from several sources for each indicator aiming to have at least input from two different sources for cross-checking.

[52] Ricardo (2023), Evaluation support study
[53] European Commission (2021) Combined Evaluation Roadmap/Inception Impact Assessment. Revision of the Directive on ship-source pollution

The evaluation matrix was reviewed several times during the study, taking into account Commission inputs as well as evidence collection activities (desk research, interview programme, survey responses and data requests), to reflect the identification and review of data sources, as well as updated evidence needs and gaps and the improved understanding of the mechanisms and structures leading to better targeted questions.

Following the conclusion of the evidence collection activities (i.e. interview programme, targeted survey, open public consultation, case studies and desk research) and the analysis of the findings the intervention logic was updated. Further, the evaluation matrix was expanded to produce a final version of the matrix integrating with the updated understanding of evidence sources and gaps. These was used to inform the selection success criteria and indicators used for each evaluation question.

Evidence collection

Desk research was used throughout the course of the evaluation to address the following objectives:

- Identify and collect qualitative and quantitative evidence to support the analysis of the evaluation questions.
- Identify any information gaps and propose how to manage these gaps through targeted consultation activities.
- Identify and collect data used as input to the evidence analysis, and for the other indicators identified in the evaluation matrix that are used to support the analysis.

The **field research** has been structured within the context of a stakeholder consultation strategy, which relies on a combination of stakeholder engagement tools, including targeted surveys and interviews, direct information requests and an analysis of other Commission-led consultation activities (Open Public Consultation - OPC). The approach to the targeted surveys and interviews was refined following the undertaking of exploratory interviews which took place during the inception phase of the evaluation. More details on the stakeholders' consultation are provided in Annex V.

Evidence analysis

The data collected was analysed with the aim to respond to the evaluation questions, using with the following approach.

Description of the implementation of the Directive

The evaluation study[54] provides a comprehensive description of the evolution and current status of the implementation of the Directive that allows to assess whether the Directive has been fully and properly implemented as intended or whether there are limitations in its

[54] Ricardo (2023) Evaluation support study for the Directive 2005/35/EC on ship-source pollution

implementation that can also limit its effectiveness. It provides a reference point for answering the evaluation questions.

Development of the points of comparison for the evaluation

In the absence of an impact assessment on the initial proposal of the Directive – that typically provides the starting point for the development of such points of comparison – the evaluation relies on other sources and inputs from stakeholders (primarily national authorities and regional bodies) to describe what was the situation at the time of the adoption of the Directive in 2005 and at the time of its revision in 2009 and how it should be expected to evolve in the absence of the Directive in terms of:

- Legal framework across Member States in terms of implementation of MARPOL convention including of the procedures adopted for holding those responsible for illegal discharges liable (i.e. the option for criminal charges and for holding legal persons liable), the type and level of penalties applicable (i.e. in the context of the implementation of MARPOL).

- Approach towards surveillance and enforcement (at national, regional and EU level) and cooperation at regional and international level, with the purpose to identify how such activities would have been performed in the absence of the Directive e.g. the satellite surveillance activities via the CSN, and whether alternative satellite-based surveillance solutions might have been adopted at a national or regional (sea basin) level.

- Level (number and volume) of detected spills at sea for the substances covered by MARPOL Annex I and II and effectiveness of enforcement activities in identifying the attributing illegal discharges to specific perpetrators. In developing the points of comparison for this aspect, it was acknowledged that although some datasets are available from global or regional monitoring of spills (such as the aerial surveillance data from specific regional or national sources), these datasets are not covering the whole of the EU and are usually not coherent in the type of spills included. Moreover, such datasets rarely extent to the period before the adoption of the Directive, making it difficult to clearly identify pre-existing trends. Therefore, in concluding on what would have been the expected development for this, it was taken into account not only the quantitative data available, but also the qualitative inputs from the stakeholders.

- Number (share) of administrative penalties and criminal convictions imposed at the time of the adoption of the Directive and expected evolution over time (this relies heavily on the availability of such data by national authorities in sufficient time series and depth and on stakeholders' consultation activities).

The evaluation also takes into consideration the developments in the relevant EU legal framework (based on the findings of the coherence analysis) since the adoption of the Directive as well as in terms of the evolution of level and type marine traffic to develop a combination of qualitative and quantitative elements that provides the relevant points of comparison.

It is not always possible to tell with certainty whether Member States would have taken additional action and how enforcement or the eventual level of discharges would evolve. Thus, a series of assumptions were used also based on feedback from stakeholders (including authorities, regional bodies, environmental NGOs and the maritime sector) to develop the points of comparison.

Analysis of evidence – evaluation questions

The evaluation brought together the evidence collected in the desk and field research, the description of the implementation of the Directive and the development of the points of comparison to develop the answers to the evaluation questions included in the evaluation matrix. It checked that the answers refer back to the intervention logic and the points of comparison, and then summarised the level of confidence of the findings, based on the robustness of available evidence and providing clear identification of where they have stemmed from (e.g. combination of desk research, field research and other evidence analysis) and what assumptions have been made.

ANNEX III. EVALUATION MATRIX AND, WHERE RELEVANT, DETAILS ON ANSWERS TO THE EVALUATION QUESTIONS (BY CRITERION)

3.1 Effectiveness

1. What implementation measures have been introduced by Member States in order to ensure the effectiveness of the Directive? Are there any significant differences in implementation measures and effectiveness across the Member States? Is national transposition law sufficiently clear and enforceable to work in practice? (EQ3)

Member States introduced implementation measures in the following key areas:

a) provisions to ensure that illegal discharges are **treated as infringements** (Articles 4 and 5)

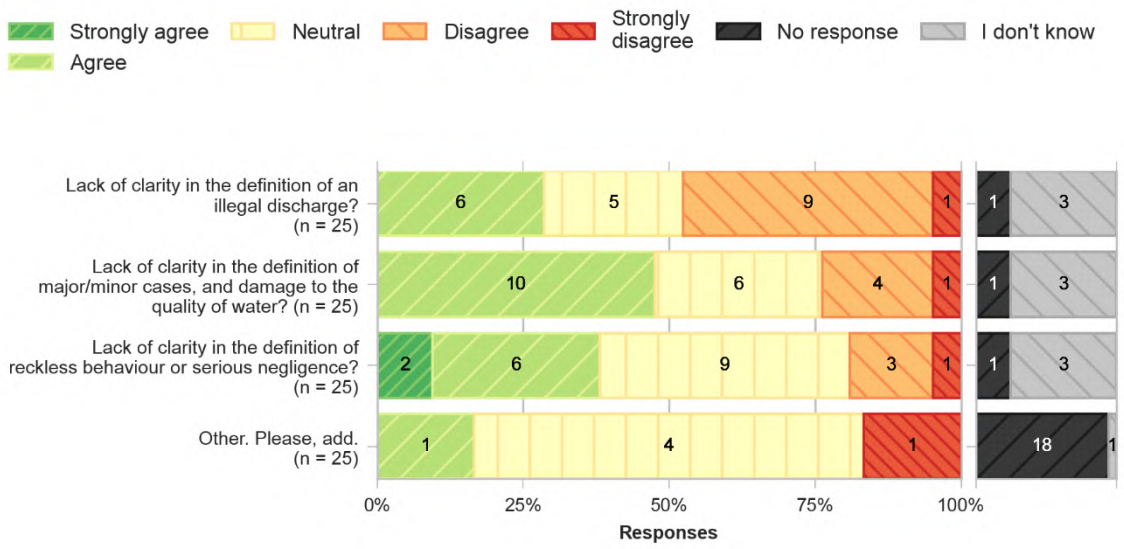
b) provisions establishing that infringements are **treated as criminal offences** (Articles 5a and 5b)

c) provisions to ensure that natural and legal persons are held liable and the **penalties** for them are **effective, proportionate and dissuasive** (Article 8, 8a, 8b, and 8c)

d) **Enforcement** provisions (Articles 6, 7 and 10) including information exchange and cooperation between Member States.

There are many differences in the types and effectiveness of implementation measures across the Member States. However, the national law is seen as sufficiently clear to be enforceable in the Member States (based on prevailing opinion of stakeholders as seen in Figure 24 below) and on the analysis of the Commission when checking the transposition and conformity with the SSP Directive. Measures are perceived to be effective, but the evaluation results show that they are not the same in all Member States.

Figure 24. Stakeholder views on the clarity of the implementation measure on treating illegal discharge as infringements introduced by Member States to comply in the SSP Directive.



There are some differences in the definition of infringement

Infringements covered by the Directive are punishable by penalties but the approach of Member States to defining infringement slightly varies. Member States have put in place part of the provisions to define infringements already prior to the adoption of the Directive to meet MARPOL requirements. Three approaches to establishing the definition of infringements were identified amongst the Member States consulted in targeted evaluation interviews or from other sources of information and are presented in Figure 25.

Figure 25: Different definitions of infringements used by Member States

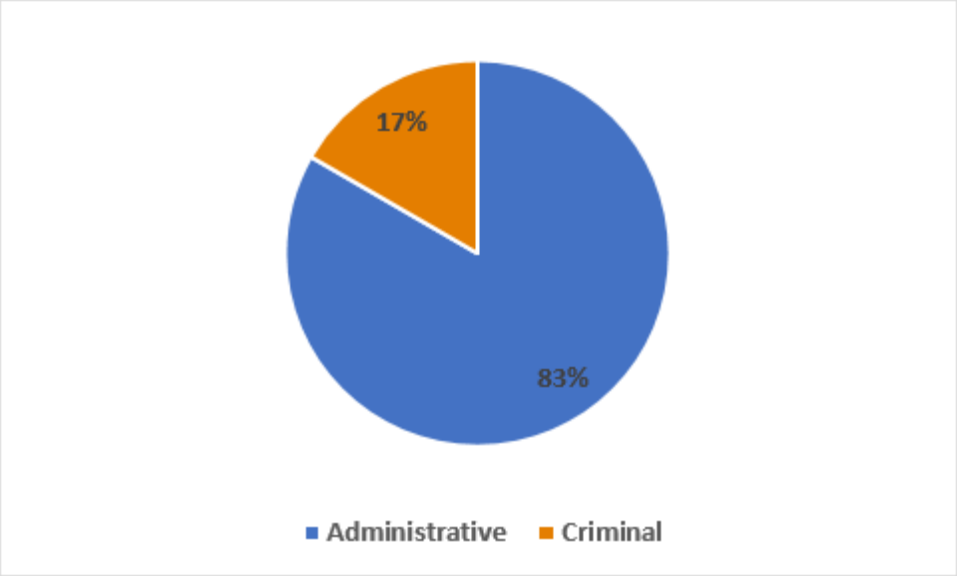
	Approaches to definition of infringement used in the EU	Member States
1	Member States explicitly specify and prohibit **discharges** of polluting substances **from ships** carried out **with intent, recklessly or with serious negligence**	BE, CY, EE, EL, IE, IT, LT, MT, NL , PT, RO, SE and SI
2	**General ban of discharge**, disposal and dumping of harmful substances **from ships** into the sea. These are subject to specific exceptions e.g. if permitted by MARPOL by way of derogation or in specific circumstances allowed by Helsinki Convention 1992 (Article 10-11, 15-16)	BG, FI and PL
3	All **illegal discharges**, including such outside indicated zones and permitted quantities (based on a permission regime), are to be penalised, without referring to intent, recklessness or serious negligence.	DK, FR and ES

In brief, the transposition of the Directive was generally successful and brought a considerable level of harmonisation to the definition of the conditions under which the discharge of pollutants by ships constitutes an infringement, although it did not lead to one common interpretation across the EU - this is the nature of a directive, as compared to a regulation.

There are divergences on when criminal offences are applied

In line with Article 8 of the Directive, all Member States have introduced in their national legislation penalties applicable to the various types of infringements. These include minimum and maximum levels of penalties that can be imposed for administrative and criminal proceedings as well as, maximum levels of imprisonment sentences for criminal proceedings. Most Member States impose administrative penalties to ship-source pollution incidents (as seen in Figure 26). Although this figure is not representative for the situation across the EU, it points to the fact that administrative penalties prevail.

Figure 26. Estimated share of administrative and criminal penalties for ship-source pollution



NB. Estimation based on data and qualitative input on the frequency of administrative and criminal penalties applied over the period 2012-2021 from 8 Member States and Norway (PL, NL, IT, RO, EL, LV, FI, CY, DE, NO). Although this figure is not representative for the situation across the EU, it indicates the trend.

Based on stakeholder views from interviews, the administrative procedure is usually activated in the first instance, as it is more efficient in terms of time, resources and results achieved. Only a few Members States[55] launch a criminal investigation. One Member State authority[56] indicated that if the illegal discharge does not meet certain criteria, it does not qualify as a criminal offence and the procedure is transferred to the administrative authorities.

The overall preference of Member States for administrative penalties supports the conclusion that administrative penalties are used in the majority of cases.

There are differences in the level of penalties applied to the liable natural and legal persons

The Directive, through its amendment in 2009, extends the scope of liability to cover both natural and legal persons. There are differences in the scope of liability foreseen in Member States. Relevant provisions have been introduced across the EU in national legislation to ensure that natural and legal persons are held liable (transposition of Article 8). A natural person or a company (legal entity) can be held liable for a violation of MARPOL rules in all the Member States and can be charged with penalties. Furthermore, in all Member States natural persons are liable under the criminal code. However, certain Member States[57] do not have provisions for criminal liability for legal persons, since their legal systems and legal traditions do not foresee this option.

[55] Input from interviews with BE, DE, NL and IT
[56] Interview with DE
[57] SE, DE, BG, BE, CY, FR, LT, RO

Member States have established minimum and maximum level of penalties for natural and legal persons and for administrative and criminal penalties. The levels of penalties differ between Member States. The effectiveness of these measures and the level of harmonisation of penalties are further elaborated in the response to Evaluation Question 5 (EQ5) below.

There are differences in the approach towards enforcement

The means used for the verification of polluting substances by Member States are aerial and coastal surveillance activities. The resources devoted to surveillance activities differs between Member States. The measures applied for the identification of the offenders and collecting evidence for their prosecution varies among Member States. These differences in approaches are further elaborated in the response to Evaluation Question 6 (EQ6).

To sum up on EQ3, there are differences in implementation measures applied by Member States. Some national provisions in place, were already introduced prior to the adoption of the Directive, to meet MARPOL requirements. The introduction of the SSP Directive brought a more convergent approach, yet there are gaps in the harmonisation of implementing measures (i.e. differences in definitions, types and levels of penalties) that make the rules less enforceable. Regardless of the marked differences, Member States tend to perceive the measures applied nationally as effective.

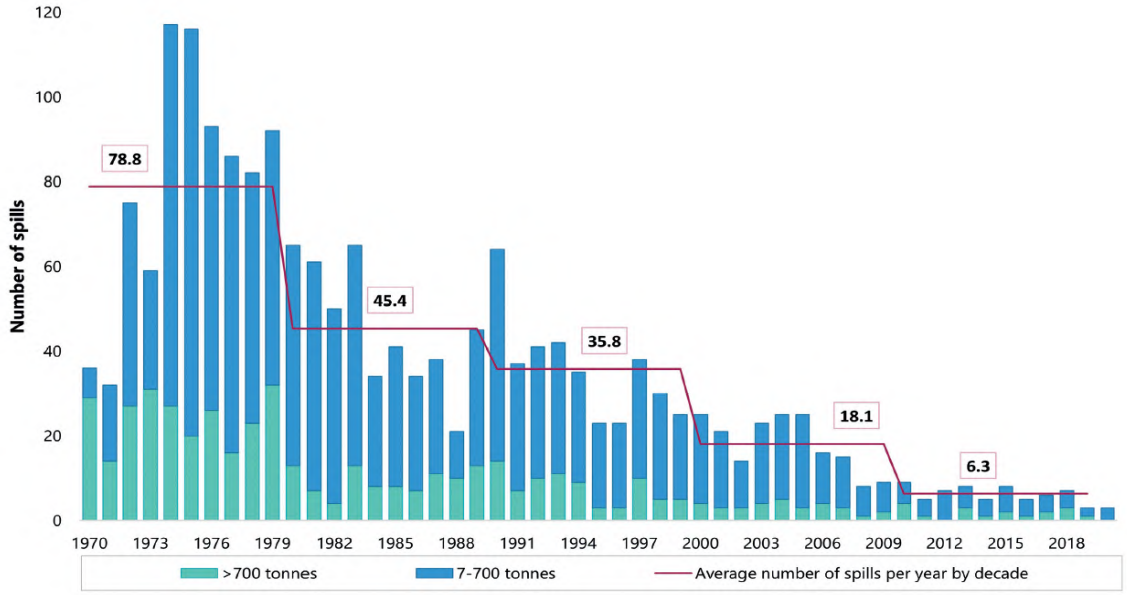
2. To what extent has the Directive had a dissuasive effect as regards <u>reducing the number of incidents</u> of discharges of substances covered by MARPOL Annexes I and II and thus contributed to the overall objectives of improving maritime safety and enhancing protection of the marine environment from pollution by ships? (EQ4)

There is insufficient evidence to confirm the extent to which the Directive (penalties applied for ship-source pollution) had a dissuasive effect i.e. how much did these penalties discourage ships from illegal intentional discharge. More information is provided in EQ5.

There is no data, at global nor EU level, on the number of incidents of discharges of substances covered by MARPOL Annex II.

As for the number of incidents of discharges of substances covered by MARPOL Annex I, the data is scarce for the EU. Globally, as shown in Figure 27, there has been a decrease of oil spills over time. The global downward trend in oil spills means that the decrease is not directly a result of the EU SSP Directive.

Figure 27. The global trend in accident-generated medium and large spills (more than 7 tonnes) from 1970-2020.



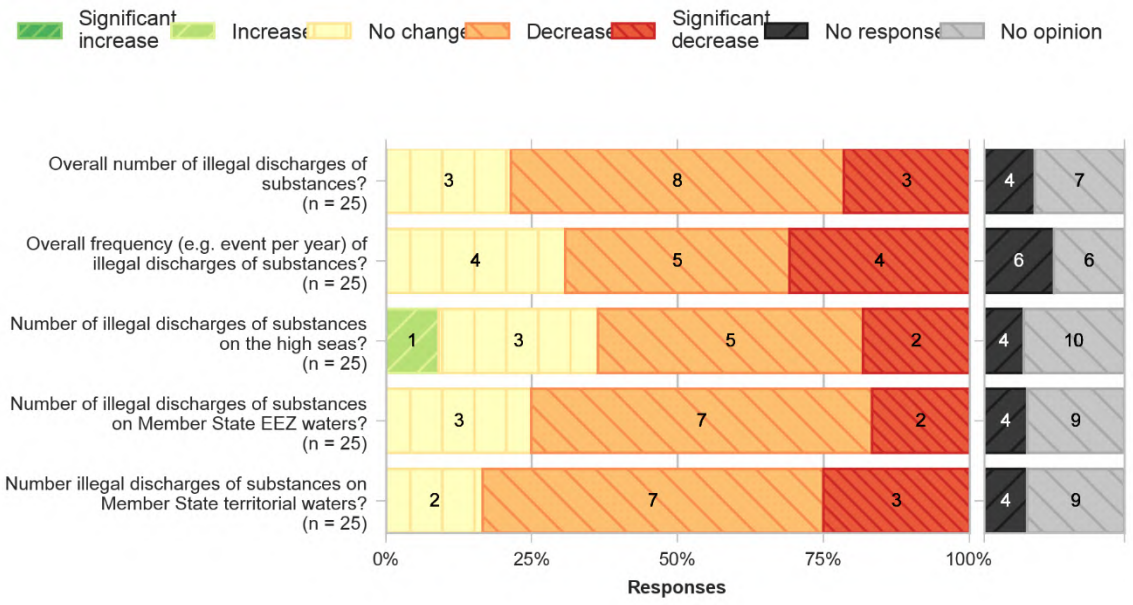
Source: Report on Global trends in oil spills from tankers (ITOPF, 2021)

Analysing data on oils spills from aerial surveillance activities reported by HELCOM and the Bonn Agreement for the Baltic and North Sea respectively, a long-term decrease in the number of spills was confirmed for these European seas. Additionally, the average size of discharges has reduced based on the data gathered by the CleanSeaNet service showing an increased share of small and medium-sized potential spills in Europe.

The results of the evaluation survey confirm that there is insufficient knowledge on the extent to which the Directive had a dissuasive effect. The stakeholders mostly responded in the evaluation survey that the Directive did not impact the number of illegal discharges or that they do not know about the impact (see Figure 28). On the other hand, stakeholders participating in the targeted interviews largely acknowledged that the Directive contributed to reducing illegal discharges from ships (11 out of 16 respondents)[58].

[58] Interviews with 7 Member States, NSN, HELCOM and EMSA

Figure 28. Stakeholder views from evaluation survey on the impact of the measures introduced by the Directive increase (green) or decrease (red) illegal discharges from ships. The predominant view is that there was no change (orange) and no opinion (grey).



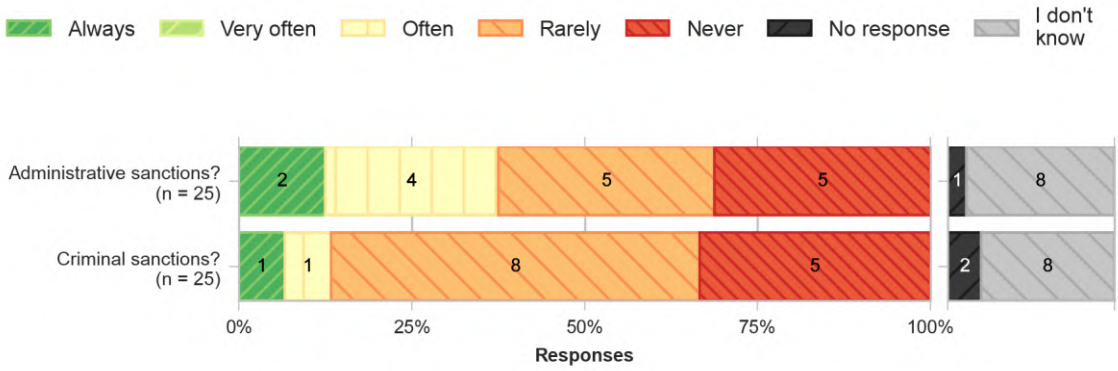
To sum up EQ4, it was not possible in this evaluation to extrapolate to what extent the Directive contributed to protecting the marine environment and improving maritime safety as a result of reducing the number of incidents of illegal discharges. This is because stakeholder views are divided, the number of incidents for EU waters is not known and because the impacts on the marine environment are indirect and have complex dynamics with various sources of pollution (e.g. direct discharges from land, run-off, atmospheric deposition or other activities at sea, such as the exploration and exploitation of hydrocarbons offshore or deep-sea mining). Beyond the stakeholder views on the effectiveness of the Directive (presented above), it was not possible to collect evidence on how far the reduction in oil spills can be attributed to the Directive and to what extent other factors played a role e.g. the safety requirement of a double-hull for ships or improvements in port state control processes.

3. To what extent has the Directive been effective in terms of ensuring that infringements covered by the Directive have been made punishable by <u>effective, proportionate and dissuasive penalties</u>? To what extent has the Directive been conducive to a harmonisation at EU level of penalties for such infringements? (EQ5)

Effectiveness of penalties

Based on stakeholder input, incidents of illegal discharges rarely result in penalties to either natural or legal persons identified as offenders. Figure 29 and Figure 30 indicate the results of the survey in this respect. Thirteen respondents answered that criminal penalties are rarely or never applied to natural persons (out of 25) or legal persons (11 out of 25 respondents) when the incident is confirmed, linked to a specific ship and proved to be illegal. Furthermore, ten respondents answered that administrative penalties are rarely or never applied both to natural persons (out of 25 respondents) and legal persons (8 out of 25 respondents).

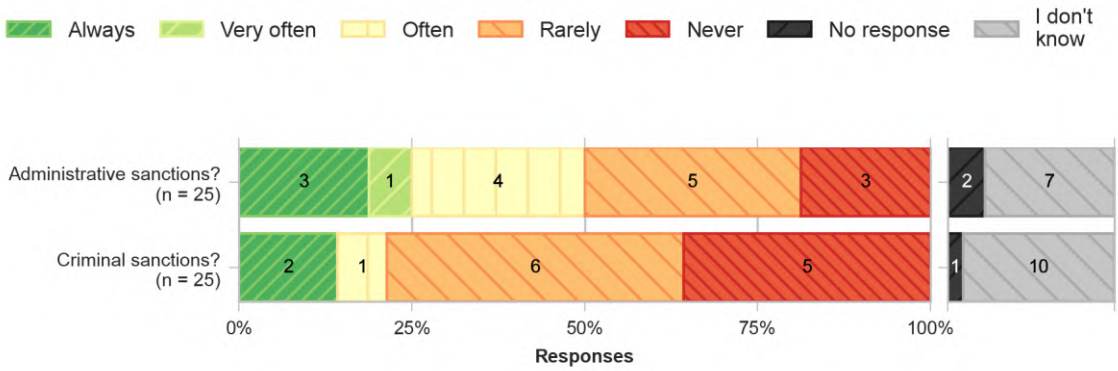
Figure 29. Stakeholder answers to survey questions
Question: How often incidents of discharges (linked to specific ships) result in administrative or criminal penalties for natural persons



Source: Survey analytical summary

Figure 30. Stakeholder answers to survey questions

Question: How often incidents of discharges (linked to specific ships) result in administrative or criminal penalties for legal persons



Source: Survey analytical summary

This suggests that the reduced (rare) likelihood of penalties for ship-source pollution, reduces the effectiveness of such penalties, however, not enough data (no statistics for the EU on the number of penalties imposed) is available to draw conclusive statements in this respect.

Proportionality of the penalties (harmonising the levels of penalties)

The analysis of minimum and maximum penalty levels shows considerable differences between Member States. As the Directive provides flexibility to the Member States to define the size, methods of calculation and applicability of penalties, the minimum and maximum thresholds for administrative penalties identified vary substantially between Member States. As seen in Figure 31, the minimum level of fines applicable to natural persons can range from 10 EUR (Estonia) to 150,000 EUR (Portugal) while minimum penalties for legal persons may range from 32 EUR (Estonia) to 500,000 (Germany). Similarly, large deviations can be seen in the levels of maximum penalties. Additionally, significant variations also exist in the mechanisms for the allocation and methods of calculation of penalties. An attempt to promote the use of harmonised penalties for the Baltic Sea countries did not deliver the

expected results as can be seen by the deviations in penalty levels adopted by Baltic Sea Member States.[59]

Figure 31: Minimum and maximum levels of penalties foreseen for infringements for natural and legal persons (in EUR) – and indication of the Member State applying them.

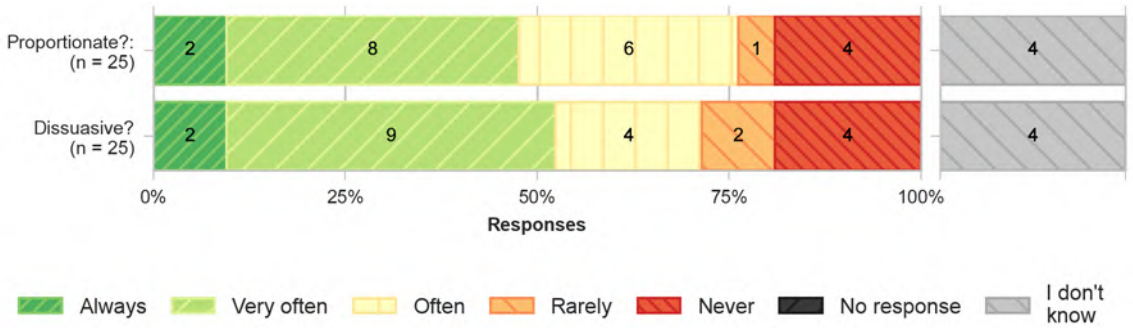
	Who?	Lowest	Highest
Minimum penalty	Natural person	10 (EE)	150,000 (PT)
	Legal person	32 (EE)	500,000 (DE)
Maximum penalty	Natural person	14,220 (SE)	5,000,000 (IE)
	Legal person	10,000 (PT)	247,000,000 (SE) Unlimited cap (DK)

Dissuasiveness of the penalties

Based on information from the targeted interviews, in some Member States, penalties can be considered high enough to have a dissuasive effect on the ship operator when coupled with effective enforcement and increased probability of being caught (mostly the Baltic Sea and North Sea Member States). However, in other Member States (mostly ones located in the Black Sea and to certain extent in the Mediterranean Sea) penalties are too low to be proportionate and thus when coupled with the low probability of being imposed, they may not be sufficiently dissuasive.

The results of the stakeholder consultations confirm that there is insufficient knowledge on the extent to which the penalties had a dissuasive effect. Eight of the Member States authorities interviewed[60] (out of 16) and half of the stakeholders participating in the survey (as seen in Figure 32) considered criminal penalties proportionate and dissuasive whereas the other half not.

Figure 32. Survey results on stakeholder views on the proportionality and dissuasiveness of criminal penalties



[59] HELCOM recommendation 19/14 (1998) A Harmonized System Of Fines In Case A Ship Violates Anti-Pollution Regulations

[60] BE, BG, HR, DE, EL, MT, RO, SE

As seen in Figure 32, criminal penalties are not the preferred regime for most Member States. As for administrative penalties, on one hand, 11 Member State authorities interviewed[61] (out of 16) agree that current administrative penalties are proportionate and act as a deterrent. On the other hand, 12 of the responses to the survey (out of 22) indicated that administrative penalties are proportionate and dissuasive whereas the other half not (see Figure 33).

Figure 33. Survey results on the proportionality and dissuasiveness of administrative penalties

To conclude, the data collected suggests that the Directive has not been effective in harmonising the level of penalties for infringements across the EU. While the levels of penalties differ significantly amongst Member States, stakeholders seem to be divided, with half considering current penalty levels proportionate and dissuasive and the other half considering them not to be sufficiently proportionate and dissuasive. Stakeholders consider the probability of penalties being imposed low (rare) and this impacts the actual deterrent potential of these penalties. Overall, there are no statistics for the EU on the number of penalties imposed and divergent views of stakeholders on the proportionality of the penalties and therefore, insufficient evidence to confirm the extent to which the penalties applied for ship-source pollution are effective, proportionate and dissuasive.

4. To what extent has the Directive improved the <u>cooperation between Member States</u> in matters of: a. improving Member State capability to timely detect discharges? B. improving Member State capacity to attribute discharges to specific ships? (EQ6)

The EU legislative framework, including this Directive has largely improved the cooperation between Member States thanks to a number of dedicated functionalities for EU surveillance, monitoring and reporting systems, such as SafeSeaNet, THETIS and CleanSeaNet.

The enhanced surveillance capacity brought by the CleanSeaNet service is viewed by many Member State authorities[62] as effective in discouraging illegal discharges as there is a higher probability of getting caught[63].

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61 BE, BG, CY, DE, ES, EE, FI, FR, IT, MT, RO

62 Input from interviews with 7 Member States

63 Interview with a Member State authority from the Mediterranean Sea: "*With the CSN service, the monitoring of sea areas has improved and the inspections of ships has been made more targeted since slicks are correlated to specific ships through the CSN service...*".

This has led to an improved capacity of Member States to identify illegal discharges as manifested by the increased identification of possible polluters reported in the feedback provided to the CleanSeaNet alerts as can be seen in the two figures below (Figure 34 and Figure 36Figure 35. Percentage of verification feedback for CleanSeaNet alerts 2015-2020

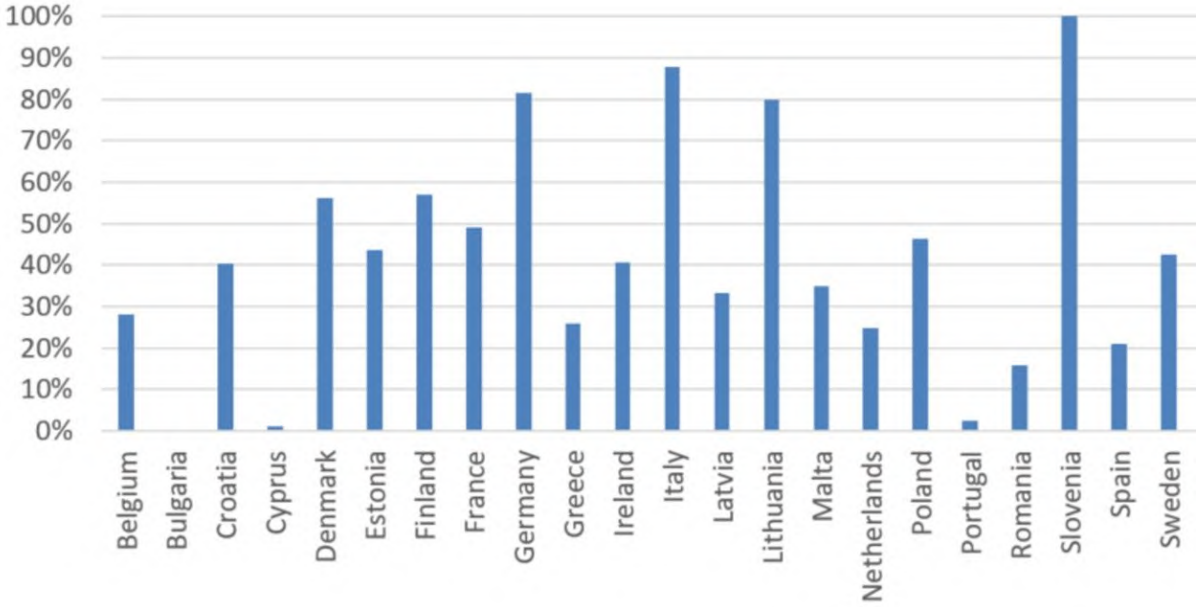


Figure 36). This increase largely follows the increase in CleanSeaNet alerts recorded over the same period. It is unclear from this evidence basis whether the increase in the identification of polluters originates from the increase in the total number of possible oil spills that have been followed up and feedback has been collected or whether this is indicative of increased capabilities of Member States in identifying potential polluters, potentially boosted by improved cooperation. Data from the Baltic Sea[64] seem to suggest that the increase in the number of identified polluters is less steep than the increase in the number of potential pollution incidents.

Figure 34. Member State verification and possible pollution detection in the Baltic Sea (for HELCOM Contracting Parties: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden)

[64] Collected from HELCOM

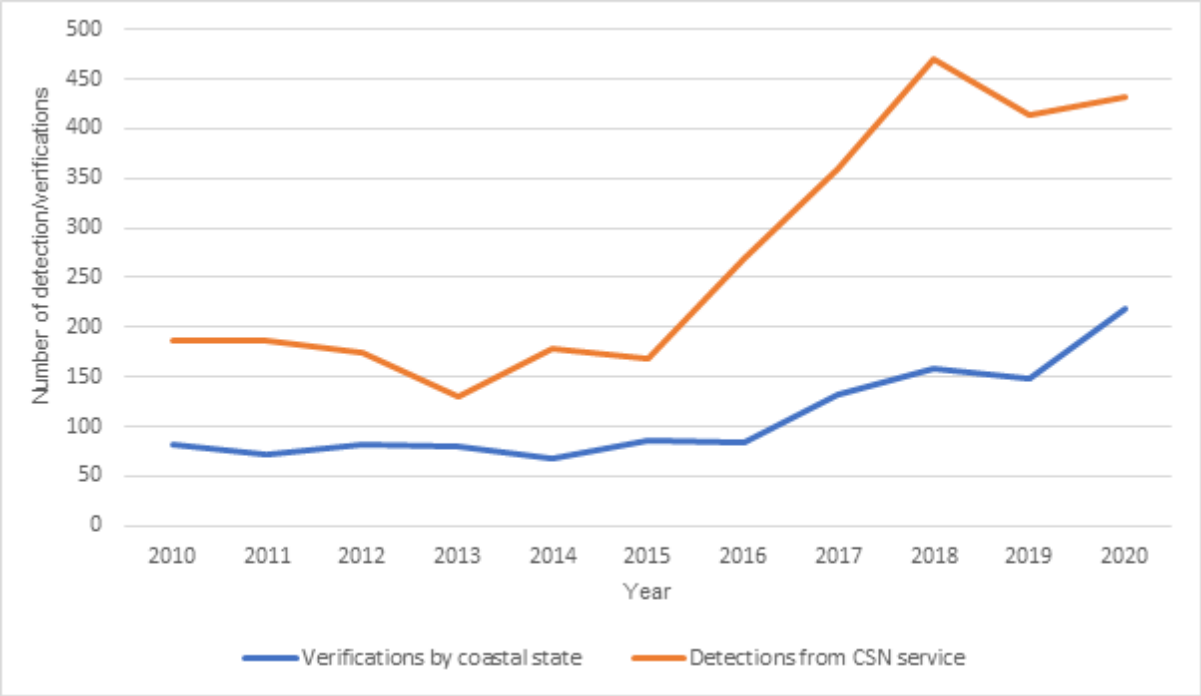

500
450
400
350
300
250
200
150
100
50
0
Number of detection/verifications
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Year
Verifications by coastal state
Detections from CSN service

Figure 35. Percentage of verification feedback for CleanSeaNet alerts 2015-2020

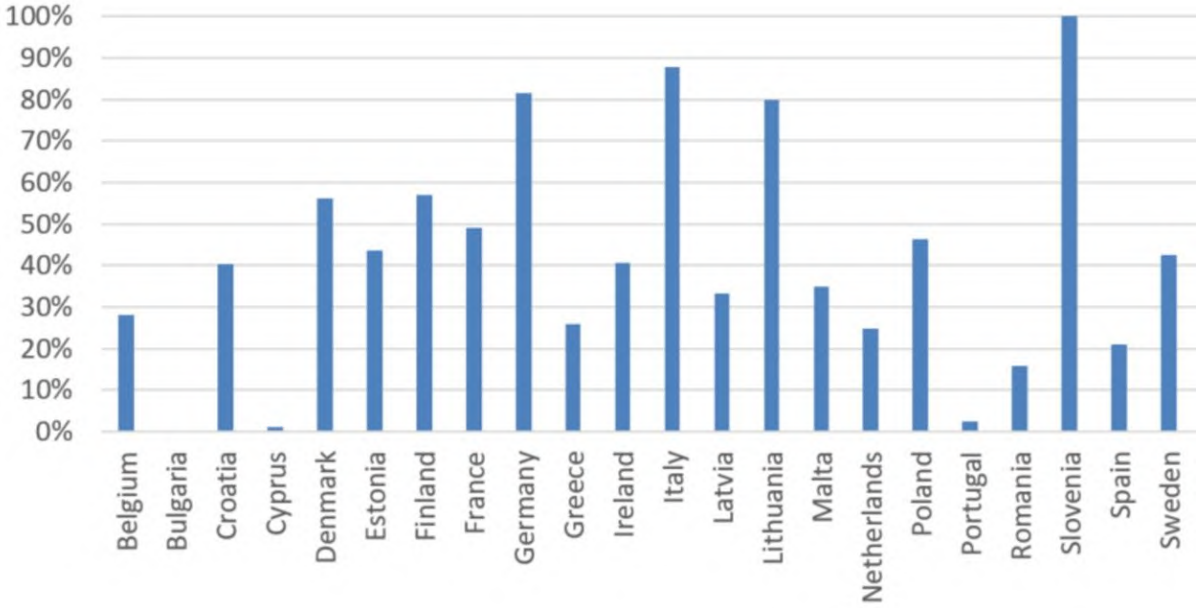
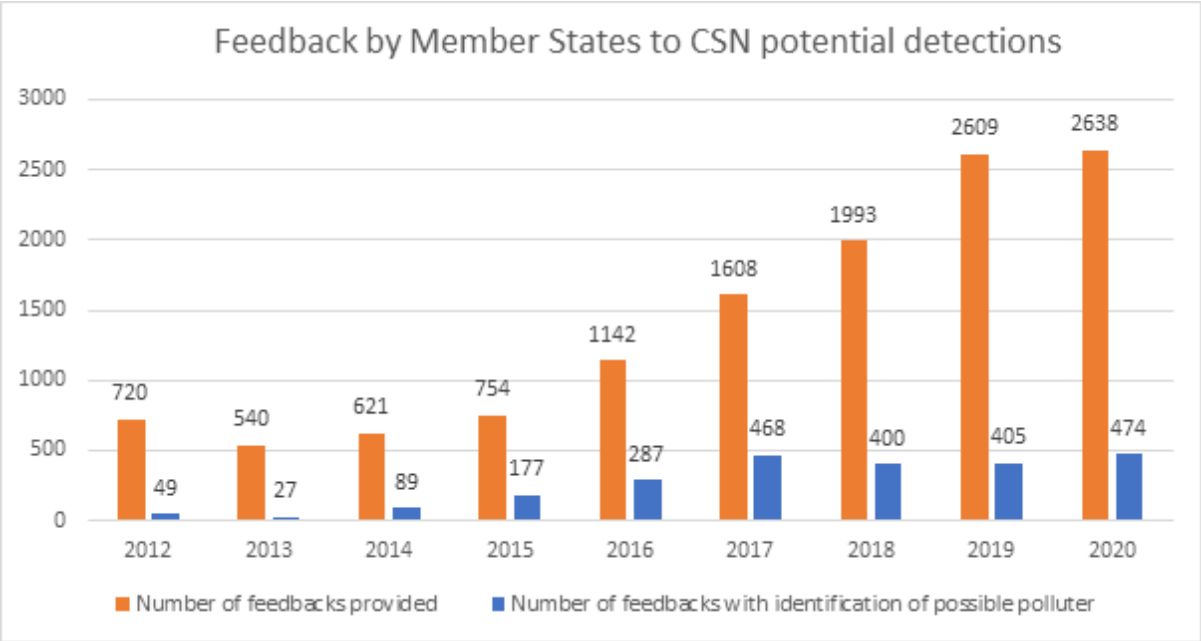


Figure 36. Identification of possible polluters as reported by Member States in feedback to CleanSeaNet alerts as a result of verification.



NB. The number of "feedbacks provided" corresponds to the verification results of in-situ observation carried out by the Member States. This number does not include the possible oil spills for which a reason for no verification was included in the CleanSeaNet feedback form.

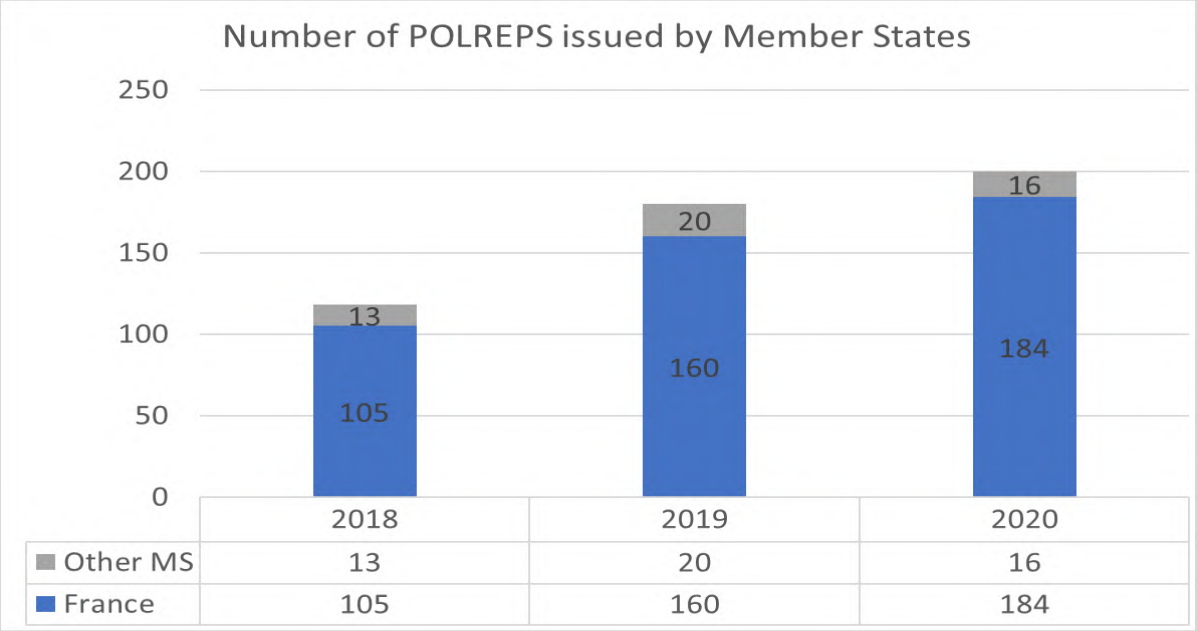
Member States adopt different approaches in order to identify potential offenders and have different evidence collection mechanisms and requirements in order to prosecute a potential offender. Authorities of different Member States may require physical or scientific evidence, including pollution samples, and visual evidence (e.g. surveillance footage, photographs, etc.) along this process. Other requirements may include ships inspection findings, witnesses'

statements, and identification of irregularities through the inspection of statutory and other ship documentation (e.g. oil logbook).

Through ship inspections, authorities often aim to match the substances identified in confirmed discharges with the cargo or fuel carried by the specific ship. The trigger for ship inspections to check compliance with MARPOL may differ between Member States. While some Member States do not require ship inspections to build up the necessary evidence for a case (such is the case of the Netherlands), others consistently perform ship inspections in response to the identification of potential pollution incidents[65].

Looking at the level of use of the EMSA cooperation tools by Member States, one can see that the use of pollution incident reports (POLREPs) to communicate pollution events of common interest is potentially not fully exploited by Member States. As seen in Figure 37, despite the steady increase in recent years, the majority of pollution incident reports submitted comes from a single Member State[66]. At the same time, and despite the increased detection of potential illegal discharges and the identification of polluters, the level of cooperation with regard to inspection requests submitted in THETIS seems to remain relatively constant, or even decline in recent years (see Figure 38).

Figure 37. Number of pollution incident reports (POLREPs) issued in SafeSeaNet by Member States



[65] As reported in the interviews with 5 Member States.
[66] France

Figure 38. Number of inspection requests registered in THETIS by Member States (with regard to MARPOL Annex I and II incidents) - overriding factor messages (priority 1) and unexpected factor messages (priority 2)

Priority 1 alerts trigger for the ship the request for an inspection at the next port of call. Priority 2 alerts trigger that the ship is targeted for an inspection but not necessarily at the next port of call. It will be inspected within a certain time window depending on the ship's profile. Thus, both types of alerts will trigger an inspection request in one way or another, within a shorter or longer time frame.

Overall, the data shown in the figures above and the development of these parameters indicate that there is cross-border cooperation and information exchange between Member States (e.g. by THETIS and SafeSeaNet).

5. To what extent has the geographical scope of the Directive contributed to its effectiveness? (EQ7)

According to Article 3, the geographical scope of the Directive covers internal waters, the territorial seas, straits used for international navigation (subject to the regime of transit passage), the EEZ or equivalent zone of a Member State, and the high seas. An initial study on the implementation of the Directive conducted by EMSA[67] identified that there are some potential disparities across Members States in the implementation of the geographical scope

[67] EMSA (2011) Study on the Implementation of Ship Source Pollution Directive 2005/35 in the EU Member States, not available online

as not all of the Members States have defined the high seas as being within the scope of their transposing legislation[68].

The Directive provisions can be applied in all areas where ship-source pollution may be found providing a comprehensive coverage and a tool that can potentially be used by Member States in all relevant cases. This allows Member States to investigate infringements across different territories and ensure, subject to international law, that regardless of the location of the illegal discharge, there is a legal basis for it to be detectable.

The Directive introduces criminal penalties for infringements in all sea territories. In the transposition of the Directive, Member States have defined both monetary as well as imprisonment penalties in case of criminal penalties. The United Nations Convention on the Law of the Sea (UNCLOS, Article 230) defines that States can impose only monetary penalties to foreign vessels in their territorial sea and beyond. This limitation does not apply within the territorial sea only if it concerns a case of wilful and serious act pollution. The Directive is not contradicting UNCLOS Art. 230 in this respect, as criminal penalties may also be of monetary nature.

Stakeholder consultation suggests that the wide geographical scope of the Directive is supported by six Member State authorities interviewed (out of 14) and respondents to the survey (12 out of 20). There are incidents identified in which Member State authorities have imposed penalties for infringements occurring on the high seas[69].

Nevertheless, according to the views of certain stakeholders[70] there have also been legal challenges related to implementing the Directive beyond territorial waters in accordance with international law, as can be seen also by the cases presented in Box 1.

Box 1. Summary of legal challenges

Intertanko case (C-308/06, n 15).

The validity of the serious negligence concept in light of MARPOL and UNCLOS was adjudicated in the European Court of Justice in the *Intertanko case* (C-308/06, n 15). The claimants maintained that the provisions of the directive establish a stricter liability regime for accidental discharges than that laid down at international level. With respect to MARPOL, the Court ruled that the Community was not bound by the convention as it is not party to it, rather only the Member States are. With regard to the UNCLOS, the Court held that the Convention does not establish rules intended to apply directly to individuals and to confer upon them rights or freedoms capable of being relied upon against States. Therefore, the nature and the logic of UNCLOS were ruled to prevent the Court from being able to assess the validity of the Directive.

The same case examined whether the concept of serious negligence infringes the principle of legal certainty. In the judgement, the ECJ confirmed that serious negligence should be interpreted as "entailing an unintentional act or omission by which the person responsible commits a patent breach of the duty of care which he should have and could have complied with in view of his attributes, knowledge, abilities and individual situation". The Court ruled that Article 4 of Directive 2005/35, read in conjunction with Article 8, does not infringe the general principle of legal certainty in so far as it requires the Member States to punish

[68] Poland and Portugal are identified as examples of unclear provisions regarding implementation in the high seas.

[69] Relevant cases have been reported by Romania, Belgium, France and Spain

[70] Interview findings from REMPEC, ENPRO, NSN and Finland

ship-source discharges of polluting substances committed by 'serious negligence', without defining that concept and leaving its definition as a matter of national competence.

Bosphorus Queen case (C-15/17, n 16)

The European Court of Justice has considered the interactions between the provision on penalties of the SSP Directive and UNCLOS in the *Bosphorus Queen* case (C-15/17) which concerned an oil spill in the Finish EEZ approximately 25 to 30 km (about 15 nautical miles) from the Finnish coast by a ship flying a Panamanian flag. The Finnish Border Protection Agency stopped the ship (that was released upon payment of a financial security) in the EEZ and imposed an administrative penalty to the company operating the ship, which was appealed on several grounds. The Court was asked to interpret a number of aspects arising from the parallel application Article 220(6) of UNCLOS and Article 7(2) of the Directive 2005/35. The Court held that Article 7(5) of Directive 2005/35 must be interpreted in accordance with Article 220(6) UNCLOS. Consequently and additionally, the Court clarified the meaning of the following concepts under both foresaid provisions:

- "clear objective evidence" needs to encompass both evidence on the commission of the violation and on the consequences thereof.
- Assessment of the consequences of the violation to the resources and related interests of the coastal Sate must conclude on both the establishment and the evaluation of the extent of the damage or the threat thereof, taking into account the nature of the damage and the foreseeable harmful consequences of the discharge, on the basis of scientific data, the nature of the discharged substance and the discharge's volume, direction, speed and period of time over which it spreads.
- The geographical and ecological characteristics and sensitivity of the Baltic Sea affect the classification of the violation and the assessment of the extent of the damage caused by the discharge.
- "coastline or related interest" has the definition in Article 2(4) of the Intervention Convention, thereby including non-living resources in the territorial sea and any resource in the EEZ.
- "resources" includes both harvested species and species which depend or associate with them.

The Court further opined that ´significant pollution´ under Article 220(5) UNCLOS should not, in principle be taken into account when applying Article 220(6) UNCLOS and that Article 1(2) of Directive 2005/35/EC precludes coastal Member States from adopting more stringent measures than those included in Article 7(2) of the same Directive, but not from adopting other measures equivalent to the scope of those measures provisioned in Article 220(6) UNCLOS.

It is noteworthy that, amongst other things, the judgement in this case confirmed the approach adopted by the Court in *Intertanko* with respect to the interaction between the Directive and MARPOL and UNCLOS.

According to some Member State authorities interviewed[71] there are limitations to the enforcement of the Directive in areas distant from the coast. The challenges are mainly related to the level of resources required to reach and investigate potential discharges in such areas, including those required for evidence collection (aerial surveillance, patrol boats etc.), as well as other operational and technical limitations, such as not enough time to reach the site and verify the potential detection before it disperses. The response to Evaluation Question 13 provides further information on the bottlenecks related to identifying, verifying and following up on incidents.

[71] BG, CY, PL and one anonymous

In conclusion, the broad geographical scope of the Directive is appropriate to ensure that, at least in principle, all infringements are detectable and can provide an effective deterrent. However, there are practical challenges identified when enforcing the Directive in the event of a ship-source pollution incident in areas outside a Member State's territorial waters and, particularly, in the high seas. These mostly relate to verification capacity constraints for Member States to confirm a potential pollution in areas far from the coast, and to the resources required to identify the polluter in a timely and effective manner. Further, legal challenges have been identified in enforcing the Directive outside territorial waters, due to the fact that, amongst others, the jurisdictional clauses enshrined in the Directive apply in parallel with those enshrined in UNCLOS, which has primacy over secondary EU legislation, since the Union is itself a party to UNCLOS[72].

3.2 Efficiency

1. To what extent has the Directive generated costs and benefits for the relevant national authorities? (EQ9a)

This section provides and overview on the costs and benefits of the Directive and specifies which costs are bared by the relevant national authorities. The benefits produced by the Directive for the authorities are increased satellite surveillance and enforcement capacity offered to national authorities, as described in EQ6.

The key benefit of the Directive is an indirect improvement in the protection of the marine environment from ship-source pollution. While there is a gradual reduction in the number of accidents resulting in oil spills, this trend was pre-existing the Directive's adoption and is global so it is difficult to indicate what part of the benefit can be attributed to the Directive as compared to other initiatives. With regards to benefits at EU level, as reported by the European Environment Agency, in the 2006-2021 period, bathing water quality in the EU has improved, as there is an increase in the number of sites classified as being of excellent quality.[73] Still, as elaborated in EQ4, it is not possible in to extrapolate the exact contribution of the Directive to this improvement of water quality due to the complex dynamics of pollutants and the various other existing sources of pollution and the fact that the impact of other initiatives is interwoven in reaching improvements at bathing sites.

Examining the costs produced by the Directive, these can be divided in the following categories[74]:

- **Adjustment costs:** These include the costs incurred to adjust stakeholder activities to the requirements of the legislation.

[72] Intertanko case (C-308/06), at 42 and 53; Bosphorus Queen case (C-15/17) at 44.
[73] EEA reports for the Bathing Water Directive 2006/7/EC https://www.eea.europa.eu/themes/water/interactive/bathing/state-of-bathing-waters
[74] As defined in the Better Regulation Toolbox: Tool #56 Typology of costs and benefits

- **Administrative costs:** These are costs borne as a result of administrative activities performed to comply with administrative obligations included in legal rules.
- **Enforcement costs:** These are costs of activities linked to the implementation of an initiative such as monitoring, inspections and prosecution.

Enforcement costs

An area where the Directive is considered to generate enforcement costs, is the requirement of Article 10 for Member State authorities *"to closely collaborate with the European Maritime Safety Agency to respond to the accidental or deliberate marine pollution…in order to develop the necessary information systems required for the effective implementation of this Directive.*

The submission of feedback in CleanSeaNet on the verification of potential pollution detections as a result of a CleanSeaNet alert generates recurrent enforcement costs for maritime authorities. The time required to insert feedback for each pollution incident has been estimated by five Member States authorities[75] to be between 10 minutes and 6 person-hours per alert. The difference in the estimations can be attributed to differences in the understanding of what activities are included in this activity. The consideration of the efforts of the authorities for the collection and preparing of the relevant data could have been included in the higher estimates. The lower estimate of 10 minutes is likely to include only the time needed to log the data in the CleanSeaNet system for each alert. For this assessment, the median value of one hour per alert has been used. To estimate the costs for verifying the additional CSN pollution alerts, an average hourly labour cost of 39.8 EUR has been assumed for professional, technical and scientific services at EU level (in 2020 prices)[76]. This means that for the approximately 2,650 CleanSeaNet alerts submitted in 2020, the enforcement costs can be estimated to be roughly EUR 105,470 annually[77].

Additionally, costs related to information exchange between Member States through the SafeSeaNet and THETIS platform are also considered to contribute to the total enforcement costs. Regarding sharing a pollution incident report (POLREP) through SafeSeaNet, feedback received by three Member States[78] point to approximately of half an hour per report. Accounting for the approximately 200 pollution incident reports submitted annually[79], this results in an approximate cost of EUR 8,000 annually. Following the same logic, the time needed to log a ship-source pollution inspection request in THETIS would also qualify as enforcement costs. In the absence of data on the time needed to log a THETIS inspection request, a similar assumption as that for the pollution incident reports (POLREPs) was made. For the 120 THETIS requests submitted in 2020 this would amount to approximately EUR

[75] Estimations provided by BG, CY, FR, PL and RO.
[76] Source: Eurostat [LC_LCI_LEV]
[77] These costs also include those related to the collection and the preparation of the relevant data for CleanSeaNet. They do not include surveillance activities (aerial or by other means) as these requirements are derived from international (i.e. MARPOL) and national legislation pre-existing the SSP Directive.
[78] Estimations provided by EL, MT and IT
[79] Source: EMSA.

5,000 annually[80]. Thus, the total costs for submitting pollution incident reports (POLREPs) in SafeSeaNet and inspection requests issued through THETIS are estimated at EUR 13,000 per year.

Competent authorities responsible for surveillance and enforcement activities are also required to devote resources and undertake costs relevant to surveillance activities (aerial or patrol boats). These requirements are derived from international (i.e. MARPOL) and national legislation pre-existing the Directive and thus no additional costs can be attributed to the Directive.

Survey and interview respondents have indicated the efficiency gains in national surveillance activities through the information obtained from the CleanSeaNet service (and the use of the other EMSA information tools), however any resources saved are reported to be redirected to more targeted national surveillance and enforcement activities, leading thus to increased benefits rather than reduced costs.

Furthermore, although the Directive establishes the obligation of Member States to inspect/verify ships suspected of illegal discharge (Article 6) or to collaborate for the inspection of ships in transit suspect for potential infringements (Article 7), these are not new requirements as they are foreseen already in the MARPOL Convention and other EU legislation[81].

Administrative costs

In relation to administrative costs of the Directive, Article 12 introduces reporting requirements to the Commission relevant to pollution detection as each Member State is required to report on this once every three years. The assessment of this cost element is detailed in the response to EQ9b and amounts roughly EUR 70,048 annually[82].

Adjustment costs

This category includes costs incurred by EMSA, in line with Article 10, to "*work with the Member States in developing technical solutions and providing technical assistance in relation to the implementation of this Directive, in actions such as tracing discharges by satellite monitoring and surveillance*".

The most significant adjustment costs generated by the Directive are related to the development and maintenance of a state-of-art system for satellite surveillance in the CleanSeaNet service. The costs associated to this are further elaborated in EQ10. The average

[80] Same assumptions for hourly labour costs as above have been used.

[81] Such as the Port Reception Facilities Directive and the Port State Control Directives.

[82] The reporting on the implementation of the SSP Directive to EC takes place every three years. For the purpose of the analysis, these costs are transformed into annual costs. This is because the main effort is related to the collection, preparation, adjustment and filling in the data in the right format to fulfil the reporting requirements. These efforts are mostly needed at the time of dealing with the CSN pollution alerts.

annual cost of operating the CleanSeaNet service (2009-2020) were estimated at the level of EUR 5.17 million.

Training and knowledge sharing activities performed by EMSA for the Member States authorities in order to improve the surveillance and enforcement capabilities across the EU are estimated as being roughly EUR 200,000 per year. [83]

Figure 39: Cost of EMSA organised activities

Activity	Number of events	Total participants	Cost per participant	Annual costs
SSP Workshops (2007-2019)	14	631	€ 2,000	€ 1,262,000
CSN User Group meetings (2007-2021)	19	544	€ 2,000	€ 1,088,000
CSN trainings (2014-2021)	10	303	€ 2,000	€ 606,000
TOTAL				**€ 2,956,000**
Average annual costs (over 15 years)				**€ 200,000**

Source: Ricardo (2023) Evaluation support study

An overview of the costs and benefits identified in this evaluation exercise is presented in Figure 40 and Figure 41 below, indicating the types of costs and benefits, and the stakeholders affected.

Figure 40. Costs of the Directive

Cost categories	Who	Elaboration	Costs
Adjustment costs	EMSA	Resources required for EU training and knowledge sharing activities	**EUR 200,000** annually
		Costs of operating CleanSeaNet and sharing pollution alerts with Member States	**EUR 5.17 million** annually
Administrative costs	Maritime authorities	Administrative costs related to reporting on the Directive implementation	**EUR 70,048** annually
Enforcement costs	Maritime authorities	Costs related to Member States feedback in CleanSeaNet service	**EUR 105,470** annually
	Maritime authorities	Costs related to information exchange procedures – Member States uploading pollution incident reports (POLREPs) in SafeSeaNet, THETIS inspection requests	**EUR 13,000** annually
	Maritime authorities for national surveillance/ coast	Costs for aerial surveillance (per hour of flight) and other national pollution surveillance activities (patrol boats)	No new costs due to operational efficiency gains

[83] Such activities take place regularly but as not all activities have a standard number of meetings annually, we estimated the total costs of participation for Member State authorities for the duration of the Directive's implementation period on the basis of data available on the number of events organised - assuming EUR 2,000 per participant in each event to cover human resources, travel and subsistence costs (estimate provided by one of the Member State authorities).

Cost categories	Who	Elaboration	Costs
	guard / port state authorities		
		Resources devoted to ship inspections	No new costs - activities provided by other legislation (PRF Directive, Port State Control Directive)
		cost of verifying the potential pollution by collecting evidence and transmitting to prosecutor	No new costs - no change existing procedures
		Administrative burden costs related to infringement procedures	No new costs - no change existing juridical procedures

Source: Ricardo (2023) Evaluation support study

Figure 41: Benefits of the Directive

Benefit categories	Stakeholders affected	Impact	Benefit
Environmental benefits	Society	• Potential decrease in the volume and number of illegal discharges of MARPOL Annex I substances from ships at EU seas • Potential decrease in the volume and number of illegal discharges of MARPOL Annex II substances from ships at EU seas	Not quantified
Social benefits (maritime health & safety, public health)	Society	• Unclear effect on the number of accidents and incidents with discharges of MARPOL Annex I and II substances • Potential reduction of beach/ bathing site pollution by MARPOL Annex I and II substances • Potential indirect health benefits as a result of reduced pollution into the sea e.g. the consumption of fish products from European seas, quality of bathing sites	Not quantified

Source: Ricardo (2023) Evaluation support study

Summing up, the adoption of the Directive reinforced some provisions that were already part of pre-existing requirements for Member States and as such relevant costs are not attributed to the Directive. Such provisions could include requirement for Member States already existent from the MARPOL Convention or their participation in regional cooperation agreements. The main cost is EMSA satellite surveillance services, roughly EUR 5.17 million annually, plus training and knowledge sharing activities estimated at EUR 200,000 annually.

The costs generated by the Directive for relevant national authorities are rather limited (as seen in Figure 40) and sum up to EUR 188,518 annually. The Directive is also seen as having generated benefits in terms improved surveillance and enforcement capabilities although the exact extent of these benefits is difficult to qualify.

Overall, the total costs can be justified by the benefits yielded in terms of improved environmental protection due to the enhancement of the satellite surveillance capacity.

2. What is the administrative burden generated by the Directive (EQ9b)

The administrative costs of the Directive affect the relevant national authorities. Article 12 introduces reporting requirements on pollution incidents. Member States are required to report to the Commission once every three years. This reporting requirement is very general and although broadly aligned with the requirements put forward by regional sea agreements and the IMO, is a duplication of effort. Depending on the level of data availability, digitalisation and automation of the data collection methods used, this may result in significantly different costs for national authorities, with more sophisticated approaches (potentially requiring more investment in IT infrastructure) minimising the effort needed[84]. Only a small number of Member States (5 out of 27) have partially complied with the Article 12 reporting requirements. The resulting cost is of a recurring nature as it needs to take place every three years. Participants to an ESSF Waste from Ships subgroup meeting discussing this issue in May 2022 were asked about the cost of the reporting requirement. 15 out of 18 participants indicated this would require up to or more than 10 days while the other three indicated this would require less than 5 days. For this assessment, we assume the median cost of 10 person-days annually for reporting to the Commission under Article 12. Accounting for 22 EU coastal Member States this amounts to approximately EUR 70,048 annually[85].

3. Could the same results have been achieved with less funding/lower cost? (EQ10)

The category of costs examined in the context of the same result with lower costs is CleanSeaNet service (development and operation).

CleanSeaNet service could not have achieved the same results with lower costs. For satellite surveillance, EMSA in 2020 purchased 8,267 images at a cost of EUR 4.58 million[86], which is around EUR 550 per image. The average market prices for SAR stripmap images of very high resolution can range from EUR 1,475 to EUR 3,875[87] depending on the SAR sensors used[88]. This means that the market price for similar images can be between **2.7 and 7 times more expensive** than what EMSA is paying for them. Economies of scale are achieved with an EU-level wide service due to the larger scale of procurement and the improved negotiating power for delivering the service centrally by EMSA.

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[84] France reported about 20 minutes required to report each identified spill. Other Member States argue it can be much higher.

[85] The reporting on the implementation of the SSP Directive to EC takes place every three years. For the purpose of the analysis, these costs are transformed into annual costs. This is because the main effort is related to the collection, preparation, adjustment and filling in the data in the right format to fulfil the reporting requirements. These efforts are mostly needed at the time of dealing with the CSN pollution alerts.

[86] The cost estimate includes supporting services related to image processing, data visualisation, quality checking and ICT support infrastructure.

[87] Cost assessments regard SAR images from TerraSAR-X Tandem-XPaz, RADARSAT-2 and ALOS-2 satellites.

[88] No information was available on the Sentinel-1 satellite that would have been more comparable.

Next, it has been assessed if the same results could have been achieved by 22 independent services of the coastal Member State. There is no national service to compare with as to understand this cost. On average, Member States may have been procuring images at the lower band of the market price i.e. EUR 1,475 per image which is 2.7 times the cost achieved by EMSA. With this assumption, as seen in Figure 42, the approach of having a one EU-level service resulted in lower annual costs of approximately EUR 7.7 million[89].

Figure 42: Annual costs savings of having one satellite surveillance service compared to 22 Member State services

Type of satellite surveillance service	Number of images	Cost per image	Total image cost
CleanSeaNet service	8,267	EUR 550	EUR 4.58 million
22 Member State services at (market price)	8,267[90]	EUR 1,475	EUR 12.28 million
Potential cost savings if 1 system and not 22 systems		**EUR 925**	**EUR 7.7 million[91]**

Source: Ricardo (2023) Evaluation support study

The costs of 22 individual systems could have been higher than presented in the table above because of the overlap of images on areas of common interest for different Member States. Such approach would also entail more information exchange costs to deal with detections of transboundary relevance. Even if Member States could procure images at a price lower than market prices[92], this would still not include the additional services included in the CleanSeaNet service. The service uses modern satellite technology, to provide a broad level of coverage, image frequency, quality and an array of services supporting the identification of potential pollution incidents. It also covers transboundary areas delivering information to all Member States in a systematic and common format. Further savings are achieved by the centralised processing of data by 6 dedicated EMSA staff, as compared to staffing 22 individual coastal services.

4. To what extent have the accompanying measures listed in Article 10 of the Directive been relevant to the overall objectives of improving maritime safety and enhancing protection of the marine environment from pollution by ships? (EQ11)

Article 10 of the Directive states that "*Member States and the Commission shall cooperate, where appropriate, in close collaboration with the European Maritime Safety Agency and*

[89] Considering the 2020 levels of activity and market prices for SAR images.
[90] Potentially higher due to overlapping images.
[91] Additional savings can be expected in the amount of personnel required by Member State authorities to support the relevant services.
[92] Especially for Member States purchasing larger number of images due to the need to survey relatively larger areas of interest.

taking account of the action programme to respond to accidental or deliberate marine pollution".

In Article 10, two accompanying measures are introduced:

*a) develop the necessary **information systems** required for the effective implementation of this Directive;*

*b) establish **common practices and guidelines** on the basis of those existing at international level, in particular for:*

— The monitoring and early identification of ships discharging polluting substances in violation of this Directive, including, where appropriate, on-board monitoring equipment,

— Reliable methods of tracing polluting substances in the sea to a particular ship, and

— The effective enforcement of this Directive.

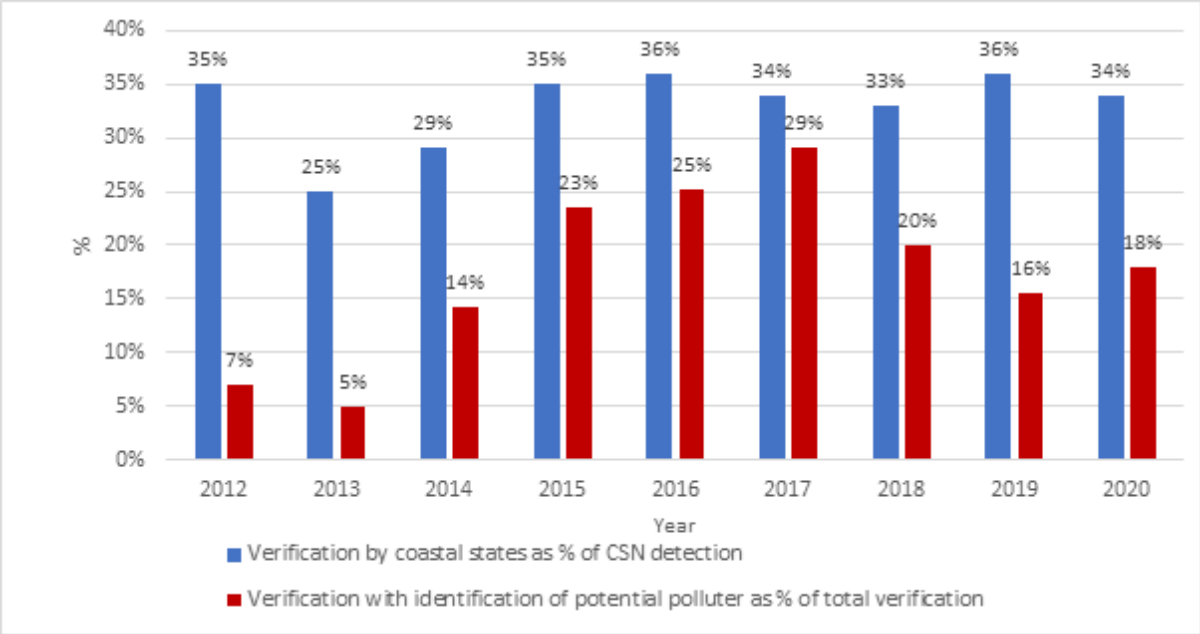
The introduction and use of EMSA **information systems**, including the CleanSeaNet service, has had an important role in achieving the overall objectives of improving maritime safety and enhancing protection of the marine environment from pollution by ships because it enhanced surveillance capacity and improved the likelihood of identifying ships discharging polluting substances in violation of this Directive.

The CleanSeaNet alert system is a source of information valued by Member States authorities and used by them to identify potential illegal discharges and polluters[93]. As shown in EQ6, more than 7,000 pollution alerts are sent to Member States annually (2019-2020). On average, almost 18% of the alerts (sent and for which feedback as a result of verification has been logged by Member States) have resulted in the identification of a potential polluter[94], as shown in Figure 43.

[93] The use of the CleanSeaNet service does not always translate into verified spills for the following reasons: limitations in resources and expertise to perform the verification, severe weather conditions, small spill volume, long time between satellite detection and verification, and the type of substance (the presence of mix of oils and other substances may impose an additional barrier to the identification).

[94] As per the information inserted in CleanSeaNet feedback form. It cannot be excluded that more CleanSeaNet alert reports (for which feedback has not been obtained) may have led to the identification of potential polluters.

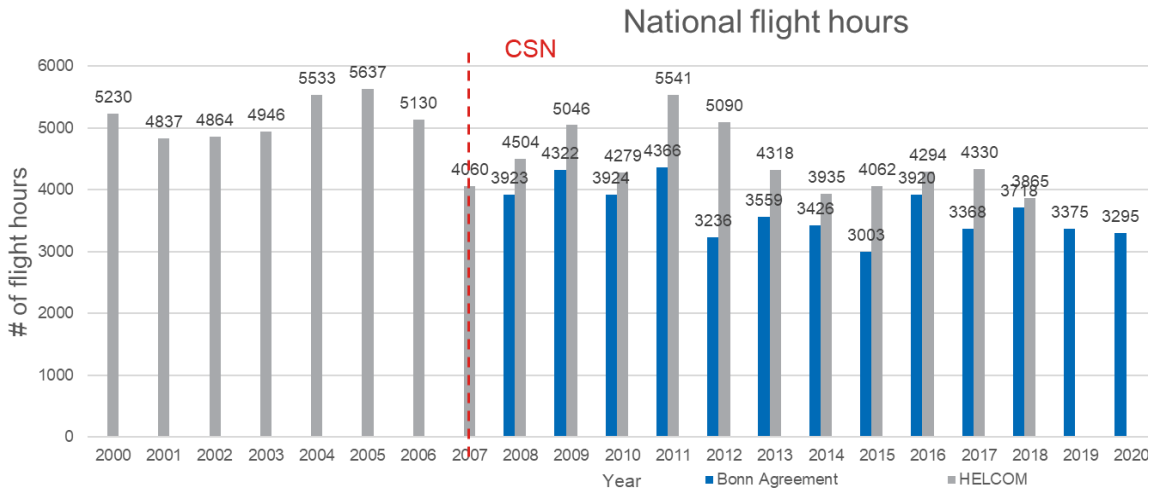
Figure 43. CleanSeaNet alerts verified by Member States (blue) for which Member States recorded that the potential polluter was identified (red).



Sources: Compiled from EMSA CSN services data

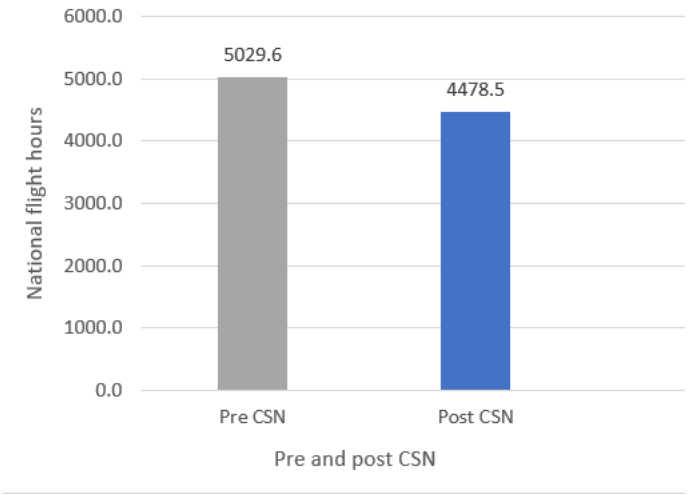
The CleanSeaNet service is valued especially by Member States where less resources are deployed for aerial surveillance because, by utilising CleanSeaNet alerts, they can perform more targeted follow-up activities. As seen in Figure 44, the increase in the number of verification activities performed by Member States might be a result of greater capacity and resource to perform verification or the improved detection capabilities of CleanSeaNet. Figure 45, based on the example of the North Sea (Bonn Agreement) and the Baltic Sea (HELCOM), Member State authorities have been deploying less aerial surveillance resources since the introduction of CleanSeaNet in 2007.

Figure 44. Aerial surveillance activity by competent authorities in the North Sea (Bonn Agreement) and the Baltic Sea (HELCOM) after the deployment of CleanSeaNet (CSN).



Source: Ricardo evaluation support study; NB. In 2007, CleanSeaNet started operation. In 2016, the CleanSeaNet service began gradually acquiring more images from the European Space Agency Sentinel-1 mission. This improved satellite surveillance capacity. The S-1B mission improved the level of satellite coverage over European waters, the number of satellite overpasses and enlargement of the monitored area.

Figure 45. Average number of surveillance flight hours in the Baltic Sea (HELCOM: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden) before and after the deployment of CleanSeaNet (CSN)



It is worth noting that such services were not available to all Member States before the introduction of CleanSeaNet and it is not expected that all Member States would have had similar capacity in the absence of the Directive. As described in EQ10, CleanSeaNet has provided a cost-efficient way for the detection of potential illegal discharges and polluters.

The other strand of actions foreseen within Article 10 is the development of **common practices and guidance.** Trainings and workshops of EMSA enhanced knowledge exchange, as well as improved the surveillance and enforcement capacity of Member States. Based on stakeholder consultations[95], Member State authorities value EMSA workshops, in particular the workshops for exchange of experience on 'the use of surveillance systems for marine pollution detection and assessment' regularly held under the work programme of the Consultative Technical Group for Marine Pollution Preparedness and Response (CTG MPPR). Specifically, what these workshops are appreciated for:

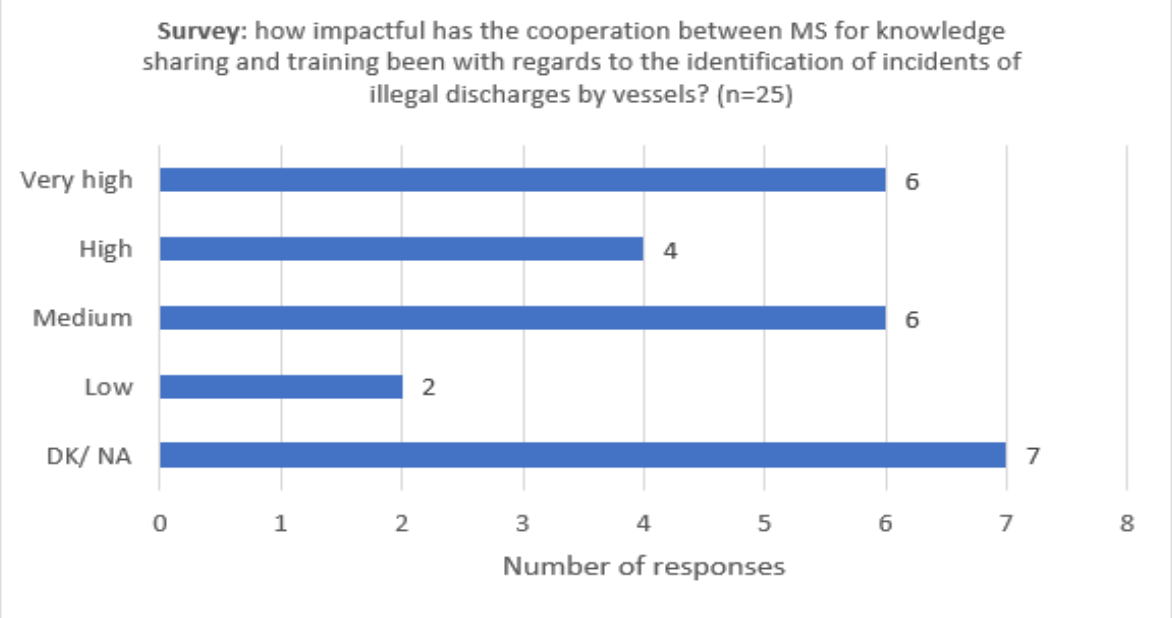
- the evaluation of case studies;
- experience sharing;
- knowledge exchange on state-of-the art tools for pollution monitoring; and
- knowledge exchange on work done for the improvement of the legal basis for data sharing.

There was also positive feedback provided during stakeholder consultations[96] on meetings of the CleanSeaNet User Group and the SafeSeaNet Users Training. These were valued for experience and good practice sharing on the use of the satellite-monitoring service. The majority of stakeholders responding to the survey (10 out of 18) have confirmed that

[95] Information from interviews with 8 Member States
[96] Information from interviews with 2 Member States

knowledge sharing and EMSA training activities increased Member State capacity to identify incidents of illegal discharges (see Figure 46).

Figure 46. Survey results on stakeholder views on impact of knowledge sharing and EMSA training activities



Source: based on survey and targeted interviews. DK/NA means that the respondent did not know or the question was not applicable.

To sum up, Article 10 activities are relevant to the achievement of the objectives of the Directive. Both the introduction of the CleanSeaNet service and activities promoting EU-wide exchange of experience have been particularly relevant when it comes to strengthening and targeting surveillance and enforcement activities, particularly for Member States with limited resources. Given the cross-border nature of maritime shipping, the information and experience exchange as well as cooperation activities with the support of EMSA are considered as a cost-effective way of action and a clear benefit of the Directive.

5. To what extent has the information and support provided by EMSA's maritime surveillance and reporting systems (CSN service, SSN and THETIS) been used to achieve the objective of the Directive and proved beneficial for Member States and what have been the benefits of the CleanSeaNet service compared to having multiple national systems for oil spill monitoring? (EQ12a, b and c)

The information and support provided by EMSA's maritime surveillance and reporting systems have been used to a large extent to support the objective of the Directive of enhancing maritime environment protection. They do so by assisting Member State authorities in identifying potential polluters. CleanSeaNet, SafeSeaNet and THETIS have proved to be beneficial for Member States with a view of enhancing their surveillance and enforcement capabilities although they have not been optimally used.

CleanSeaNet has led to an improvement and better targeting of the surveillance capabilities of Member State authorities. See EQ6 and EQ11. Nevertheless, the following bottlenecks are considered to reduce the efficient identification, verification and follow up on potential incidents of illegal discharges alerted by CleanSeaNet:

- There is a **time lag in between the actual discharge and the verification of a discharge.** This often jeopardizes the identification of the polluter. The likelihood of identifying the polluter depends on the time passed between the potential discharge (and the satellite image acquisition) and the verification activities taking place. The longer this interval, the higher the likelihood of 'nothing observed'. Aerial surveillance or sampling may take place several hours after the CleanSeaNet alert was sent e.g. because of limited surveillance resources available to Member States[97]. Moreover, the level of resources needed to collect information on an incident occurring far from the territorial seas[98] of a Member State can be a limitation to enforcing the Directive in its full geographical scope and especially on the high seas.

- **Spills in high traffic intensity areas** may make AIS backtracking and the identification of the polluting ship challenging despite modern replay tools and the contribution of Integrated Maritime Services e.g. automated ship behaviour monitoring tools[99].

- There is a **time lag in between the actual discharge and the detection by CleanSeaNet.** The fact that certain areas of interest are scanned up to 20 times a month, increases the probability of detection, but it is still likely that when the image is taken, a potential discharge may have already been in the water for many hours.

SafeSeaNet and **THETIS** also contribute towards the achievement of objectives of the Directive and were perceived as useful by the majority of respondents in the stakeholder survey (11 out of 17 respondents).

SafeSeaNet is used to exchange information when pollution of the sea has occurred or when a threat of such is present and communication between Member States is needed. However, only few Member States are submitting pollution incident reports (POLREPs) to alert other Member States on possible pollution cases. Whilst there is an increasing number of reports submitted in SafeSeaNet (118 reports in 2018 and 210 in 2020), 87% of them came from one single Member State.

The THETIS system improved the cooperation of Member States in pollution verification. There were on average (in 2011-2021) over 100 inspection requests (i.e. overriding or unexpected factor messages) logged annually in THETIS arising from suspicions of possible illegal discharges of MARPOL Annex I and II substances .

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97 Interview input from Sweden and REMPEC
98 Or more specifically, the distance from the operational bases at which surveillance resources are stationed
99 Interview input from HELCOM and France

The use of all three EMSA tools can have a further possible deterrent effect, by increasing awareness of their existence. If seafarers are aware of these tools and the increased risk of illegal discharges being identified, then they could be discouraged from intentional disposal the illegal polluting substances at sea.

Finally, as seen in the response to EQ11, the benefits of the CSN service use at an EU level come at a cost advantage compared to the establishment and operation of parallel systems by the 22 coastal Member States. Under the assumption that the same level of service would be pursued, an annual cost saving of EUR 7.7 million annually is estimated.

3.3 Coherence

1. How does the Directive contribute to the objectives of relevant EU maritime and environmental legislation, in particular: Directive on Port Reception Facilities (EU) 2019/883, the Marine Strategy Framework Directive (Directive 2008/56/EC), the Directive on the sulphur content of marine fuels (Directive 2016/802/EU), the Waste Framework Directive (Directive 2008/98/EC) and other relevant EU waste legislation, as well as the Commission initiative on marine litter (SWD(2012) 365 final)? (EQ13)

To answer this question, we examined if and how the SSP Directive objectives and provisions are consistent with the key EU maritime and environmental legislation and policy initiatives mentioned in the question.

The Directive contributes to the objectives of the **Marine Strategy Framework Directive** (MSFD) (Directive 2008/56/EC) to 'protect and preserve the marine environment [and] prevent its deterioration' and 'prevent and reduce inputs in the marine environment'. The SSP Directive contributes by addressing the disposal at sea of oil and noxious substances. However, the contribution is partial due to differences in scope of the two instruments. The MSFD defines pollution as the "*direct or indirect introduction into the marine environment, as a result of human activity, of substances or energy, including human-induced marine underwater noise, which results or is likely to result in deleterious effects such as harm to living resources and marine ecosystems, including loss of biodiversity, hazards to human health, the hindering of marine activities, including fishing, tourism and recreation and other legitimate uses of the sea, impairment of the quality for use of sea water and reduction of amenities or, in general, impairment of the sustainable use of marine goods and services"* (Article 3(8)). This definition is much broader than the scope of the Directive (that includes only substances identified in MARPOL Annexes I & II). It includes all hazardous substances, marine litter, energy and underwater noise. In brief, the SSP Directive only partly contributes to the Marine Strategy Framework Directive objectives.

The Directive also contributes to the objectives of the **Port Reception Facilities Directive** (PRF) (Directive (EU) 2019/883) to '*protect the marine environment against the negative effects from discharges of waste from ships that use ports located in the Union, while ensuring the smooth operation of maritime traffic'*, by addressing the disposal at sea of oil and noxious substances (Annexes I and II of MARPOL). With this regard, both Directives are complementary in targeting waste generated by ships. However, the complementarity is only

partial due to the narrower scope of the SSP Directive with regards to polluting substances. The PRF addresses, also, MARPOL Annexes IV (sewage), V (garbage) and VI (waste including discharge water from scrubbers). This means that the Directives do not fully complement each other since disposing at sea of the Annex IV, V and VI substances within the scope of the PRF is not considered as an offence under the SSP Directive. If a ship was to discharge polluting substances covered by Annex IV-VI at sea, the infringement would fall on international legislation, i.e. MARPOL as well as any relevant national laws. It is noteworthy that the preamble (recital 13) of the Port Reception Facilities Directive encourages an assessment of the desirability to extend the scope of the SSP Directive to align it with MARPOL.

The **Directive on the sulphur content of marine fuels** (Sulphur Directive) (Directive 2016/802/EU) sets as an objective the reduction in the sulphur content of certain liquid fuels. It introduced limits for the sulphur content of fuels used in the European seas, in alignment with Annex VI of MARPOL, to reduce SOx exhaust gases deriving from the ship engine combustion of the said fuels[100]. Directive (EU) 2016/802 allows the use of exhaust gas cleaning systems (EGCSs) or scrubbers as an alternative compliance method with the low sulphur in fuel requirements under the directive. The scope of the SSP Directive does not cover SOx emissions to air, which are regulated under Annex VI of MARPOL, and so the two Directives work in parallel as they cover different aspects of the MARPOL Annexes. Due to the diverging scope, the SSP Directive does not contribute to the objectives of Directive (EU) 2016/802 as it does not cover air pollution.

Marine litter is addressed in several EU Directives. It is in scope of the **Waste Framework Directive** (WFD) (Directive 2008/98/EC) that applies to all wastes, with several exceptions, including emissions to air and sewage. The WFD outlines a framework for the prevention, recycling and disposal of waste, including marine litter while the SSP Directive aims to discourage the illegal discharge of waste into the sea. In this respect, the two instruments complement each other.

Furthermore, marine litter is addressed by the **Single-use Plastics Directive** (EU) 2019/904 which regulates the use, production, consumption and waste management of single use plastics and fishing gear and includes market restrictions for certain products and targets for collection and recycling. The Commission is also assessing possible measures for the reduction of microplastics intentionally added in products but unintentionally released to the environment during their life cycle[101]. In principle, these EU policies and initiatives aim to prevent and reduce the environmental impact of (micro-) plastics on the environment, and in particular, on marine environment and are thus aligned with the objective of the SSP Directive to enhance environmental protection. Nevertheless, they are not expected to act complementary to the SSP Directive due to the scope difference as plastic pollution is not covered by the SSP Directive.

[100] The operational discharge waters from EGCs are also under scrutiny at the IMO due to their negative impact on the sea water quality and on the marine environment.

[101] https://ec.europa.eu/environment/news/microplastics-public-consultation-2022-02-22_en

2. Are there any inconsistencies/overlaps/gaps between the Directive and other interventions at EU/national/international level which have similar objectives? (EQ14)

Beyond the EU initiatives addressed in EQ13, the coherence of the Directive with other relevant EU legislations with similar objectives is further assessed.

The **Environmental Crime Directive** (ECD) (Directive 2008/99/EC) supports the protection of the maritime environment as its focus is on defining serious offences that harm the environment and requires Member States to introduce harmonised criminal penalties for these offences. The ECD currently does not cover ship-source pollution. However, based on the legislative proposal of the Commission of 2021 the scope of the ECD is to be extended to cover ship-source pollution. Once the new ECD is adopted, it will set the framework under which criminal offences will no longer be addressed in the SSP Directive. In such case, the SSP Directive will be a sectoral instrument for ship-source pollution complementary to the ECD.

The **Environmental Liability Directive** (ELD) (Directive 2004/35/EC) establishes a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage. Pursuant to the ELD, damage or imminent threat of such damage to protected species and natural habitats, as those are designated by relevant EU and national legislation, water damage to inland surface waters, transitional waters, coastal waters (at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured) and groundwater and land damage from, amongst others, transport activities by sea of dangerous goods or polluting goods as defined in Council Directive 93/75/EEC concerning minimum requirements for vessels bound for or leaving Community ports and carrying dangerous or polluting goods (repealed by Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC) are subject to the provisions of the ELD. These provisions prescribe, amongst others, that, where there is an imminent threat of such damage occurring, the operator shall, without delay, take the necessary preventive measures. In this context, 'preventive measures' means any measures taken in response to an event, act or omission that has created an imminent threat of environmental damage, with a view to preventing or minimising that damage. The competent authority shall require that the preventive measures are taken by the operator. If the operator fails to comply, the competent authority may take these measures itself. Although the SSPD does not directly regulate ex ante ship-source pollution, but only deals with ex-post imposition of penalties, preventive measures may be relevant in determining whether a discharge is considered an infringement. As such, SSPD transposes Regulation 4.2 of MAPROL Annex I and Regulation 3.1.2 of MARPOL Annex II, which provide that, amongst other conditions, if all reasonable precautions have been taken after the occurrence of the damage or discovery of the discharge for the purpose of preventing or minimizing the discharge, then discharge may not be considered as an infringement. Nevertheless, seeing as the ELD delineates, amongst others, the powers of the competent authorities in such scenario of imminent threat to the environment, whereas the SSP Directive prescribes the conditions upon if penalties would be imposed when that

scenario has indeed materialised in a discharge, it is concluded that the ELD and SSP Directive are complementary to one another. With regards to 'remedial measures' prescribed by the ELD and the obligation of the polluter to pay the remediation costs, the ELD and SSPD do not coincide, since the SSP Directive imposes penalties to the responsible actor for a polluting event, whereas the ELD regulates the costs of restoration, rehabilitation or replacement of damage caused by a polluting event.

The **Port State Control Directive** (PSCD) (2009/16/EC) aims to reduce substandard shipping in the waters under the jurisdiction of Member States. This includes substandard performance in the area of the application of environmental legislation. It aims to align Member State compliance with international and relevant EU legislation, and it works in the same direction as the SSP Directive in view of targeting an improved enforcement of MARPOL. Nevertheless, the PSCD scope is broader than that of the SSP Directive as it covers also waste included in Annexes IV, V and VI from MARPOL which are outside the scope of the Directive.

The **European Mission, "Restore our Ocean and Waters by 2030"** launched within the Horizon Europe 2021-2027 programme sets, amongst others, the goal to "Prevent and eliminate pollution". Through this Mission, research and innovation activities are funded through the Horizon Europe programme with the aim to prevent, minimise, eliminate and monitor and control pollution of EU waters. In this respect, this Mission's objective aligns with that of the SSP Directive as it aims to improve environmental protection of the seas. Nevertheless, the Mission has a broader scope, dealing not only with ship-source pollution but also with other substances (including micro-plastic waste, chemical and nutrient pollution) that goes beyond what is targeted by the Directive. The Mission has launched 11 research projects under this objective, however the majority of them are targeting (micro-) plastic pollution and pollution from fishing gears while no direct reference is made to MARPOL Annex I and II substances. Thus, to date this initiative has little relevance to the SSP Directive. The Mission has launched two sets of calls, one in 2021 addressing in particular plastics and microplastics (relevant to MARPOL Annex V), for which projects have already been selected and a second one in 2022 addressing chemicals (relevant to MARPOL Annex II), for which projects are still under evaluation. Nutrients are expected to be covered in the future (relevant to MARPOL Annex IV).

With reference to regional level, inconsistencies were found between the SSP Directive and international or regional conventions related to differences in scope, whether this related to the range of discharges covered, the geographical scope and/or the types of ships/activities covered. Marine environmental protection is coordinated regionally through the EU's engagement in the **Regional Sea Conventions**, through the strong links with the EU's own implementation of the Marine Strategy Framework Directive, thereby ensuring that both EU Member States and third countries aspire to an equivalent ambition of protection of the seas and ocean. A number of regional sea conventions cover EU marine waters: the Helsinki Convention – HELCOM (Baltic Sea), Oslo-Paris Convention – OSPAR (North-east Atlantic), the Bonn Agreement (North Sea), the Barcelona Convention – UNEP-MAP (the Mediterranean) and the Bucharest Convention (Black Sea). The EU is a contracting party to

the first three. There are differences in the scope of substances covered. More specifically, the Helsinki convention applies to substances listed in Annex I-V of MARPOL, and the Bucharest convention applies to substances listed in Annex I-IV. The OSPAR convention applies to all wastes with narrow exceptions, and the Bonn Agreement and the Barcelona convention apply, on top, to emissions to air which are covered in Annex VI of MARPOL.

With reference to international level, a first key point relates to the narrow scope of the SSP Directive (Article 2) compared to the **MARPOL Convention** concerning the discharges covered, focusing only on the discharges covered by Annex I and Annex II of MARPOL but not including harmful substances in packaged form, sewage, garbage and emissions to air (Annexes III, IV, V and VI respectively).

In addition, plastic pellets are not classified as harmful substances in packaged form but discussions are ongoing in IMO to assess the best possible solution to tackle the environmental risks associated with the maritime transport of pellets, starting with their classification as harmful substances.

3.4 EU Added Value

1. What is the additional value of the Directive compared to what has been or what could have been achieved by Member States at national and/or regional and international level, for example with a view to the cross-border impacts of ship source pollution? (EQ15)

The adoption and implementation of the Directive has resulted in significantly improved spill detection capabilities (see EQ6 and EQ12) compared to what could have been achieved with actions at a national, regional or international level only. This has been achieved mainly with the enhanced satellite surveillance capabilities and the improved cooperation with the use of EMSA-developed systems and tools. The CleanSeaNet service has been a key driver to achieving economies of scale in implementing otherwise costly surveillance activities which have benefited mostly Member States with weaker pre-existing surveillance regimes and less resources in their disposal perform the required surveillance activities (see EQ10 and EQ11). Ultimately, the improved detection capabilities have supported a more effective deterrence of illegal discharges resulting in an improved environmental protection status (see EQ4).

The enhanced surveillance activities might be linked to a certain extent with the increase in the identification of potential polluters by Member States (See EQ6). While this may be attributed to the increased number of potential detections/ alerts, the improved identification capabilities introduced by the use of EMSA systems might have led to at least a certain level of improvement of Member State capabilities to identify potential polluters, although the results of this process depend also heavily on the verification activities undertaken and the resources devoted to them.

Nevertheless, despite leading to a more harmonised legal framework, the Directive has not been able to deliver a harmonised approach in the way Member States prosecute infringements and impose penalties on verified offenders. The approach followed is still

highly dependent on the legal tradition of each Member State and the Directive has brought little change to pre-exiting practices (see EQ5).

2. Would it have been possible to achieve the same results without the Directive? (EQ16)

The introduction of the EMSA-developed systems and services has led to an enhanced and more targeted verification by Member States, which could have not been achieved in their absence. This has been particularly the case with the introduction and use of CleanSeaNet that has enhanced the targeting of Member State authorities (see EQ4, EQ10 and EQ11). Although SafeSeaNet and THETIS tools would have still been in place without the Directive, the Directive has, to a certain extent, prompted their use by Member State authorities. Although the current use levels appear to have room for improvement, it is considered likely that their use would have been even lower in the absence of the Directive (see EQ12).

As mentioned also in EQ3, the adoption of the Directive has led to some action towards harmonising the legal framework of Member States, however the Directive did not achieve a practical shift in the proportion of cases treated criminally as the prevalence of existing legal traditions in Member States has prevented relevant change (see EQ3 and EQ5). This mean that the Directive has not been conductive in delivering results in this respect that would not be achieved in its absence.

3.5 Relevance

1. To what extent is the transposition into EU law of standards introduced by the International Convention for the Prevention of Pollution from Ships (MARPOL), related to the prohibition to discharge polluting substances into the sea and to the specification of the penalties to be imposed, still required and appropriate? (EQ1)

Two key **problems and needs** were identified by stakeholders (see Figure 1) which are considered in more detail below.

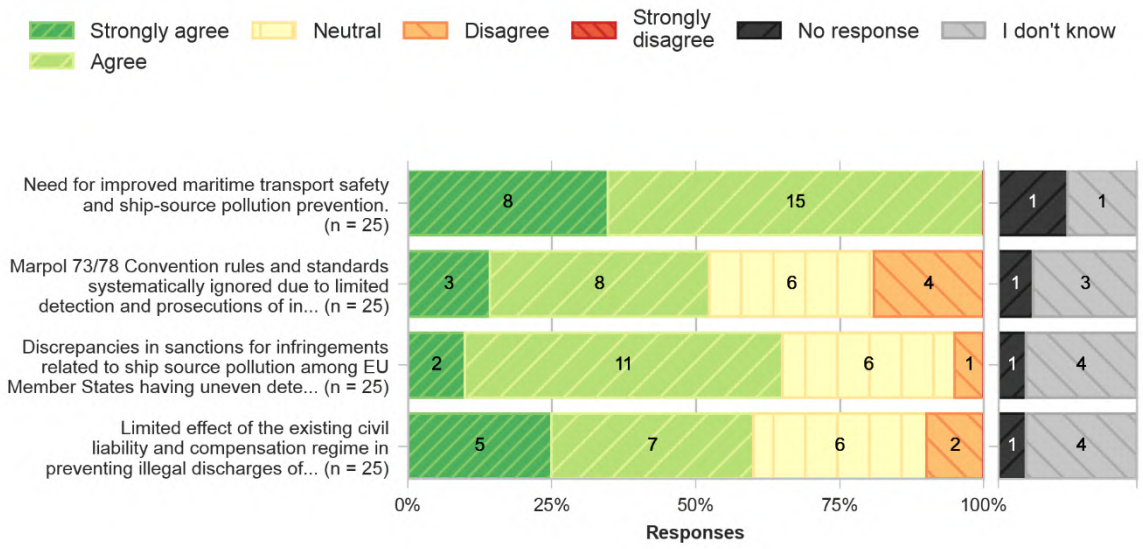
Issue 1 - '*Maritime transport safety and ship-source pollution prevention'*: while the number of medium and large oil spills of over 7 tonnes has been in decline since the 1990s. As discussed in more detail in EQ4, ship-related pollution incidents continue to occur. Stakeholders (consulted in the survey and interviews) largely agree that this issue is still relevant (15 out of 23 agreed and 8 out of 23 strongly agreed). It was acknowledged by Member State authorities, international bodies and the maritime sector[102] that whilst shipping is considerably safer and there are fewer spill incidents, in part due to improvements in technology and training standards, ship-source pollution is still occurring, and further improvements are still required. Member State authorities[103] and maritime sector stakeholders[104] also pointed to the recent adoption of more ambitious target at EU level to work towards 'zero pollution', including EU Action Plan: '*Towards a Zero Pollution for Air,*

[102] 3 Member State authorities; regional body HELCOM; 3 industry stakeholders
[103] CY
[104] ECSA, ICS

Water and Soil' (European Commission, 2021) pointing to the ongoing relevance of action in this area (see also EQ2). This indicated that the issue/problem still required action.

Issue 2 - '*MARPOL 73/78 Convention rules and standards systematically ignored due to limited detection and prosecution':* The effectiveness section revealed that although there has been increased satellite surveillance capacity (since 2015 via CleanSeaNet) allowing the identification of more/smaller spills and demonstrating increased detection, there is limited data/information available on prosecution activities. The majority of stakeholders interviewed agreed that the incorporation of international rules into EU law is still relevant (9 Member State authorities and a regional body). In conclusion, although detection has improved, prosecution of infringements is uncertain, and most stakeholders agree that the issue is relevant.

Figure 1. Considering the issues identified at the time of the Directive adoption, to what extent do you agree that these issues are still relevant in the current context?



Source: Stakeholder survey

Concluding, consideration of the issues/problems identified by stakeholders and assessment of the Directive's objectives reveal that despite progress made in pollution detection and enforcement, pollution still occurs – the transposition of MARPOL standards into EU law is therefore still required and relevant.

2. To what extent is the Directive still relevant for the EU wider policy goals and priorities and for EU citizens? (EQ2)

The extent to which objectives and provisions of the Directive are still relevant in view of EU wider policy goals and priorities and for EU citizens were reflected upon in order to answer EQ2.

Wider EU policy goals are set out in a number of key policy initiatives.

The **European Green Deal** and the EU Action Plan: '*Towards a Zero Pollution for Air, Water and Soil'* (European Commission, 2021) set out a target of zero pollution ambition by

2050 for '*air, water and soil pollution to be reduced to levels no longer considered harmful to health and natural ecosystems, that respect the boundaries with which our planet can cope, thereby creating a toxic-free environment'*. Under the Zero Pollution Action Plan (ZPZP), specific targets have been set for 2030 to speed up reducing pollution at source, including those aimed at water, which are: "*improving water quality by reducing waste, plastic litter at sea (by 50%) and microplastics released into the environment (30%)".*

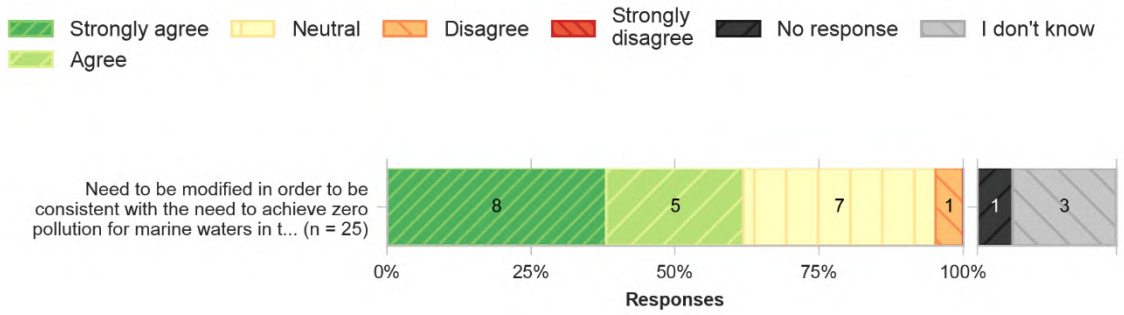
The **Sustainable and Smart Mobility Strategy** (SSMS) aims to significantly reduce emissions from the transport sector and to become more sustainable. Relevant flagships include '*Flagship 1: Boosting uptake o zero-emission vehicles, renewable & low-carbon fuels and related infrastructure'* (including use of sustainable maritime fuels); '*Flagship 2: Creating zero-emission airports and ports'*; '*Flagship 4: Greening freight Transport'* (including making European Maritime areas sustainable, smart and resilient); and 'Flagship 1: Enhancing transport safety and security'.

The **UN's Agenda for Sustainable Development** (adopted by all UN Member States in 2015) (United Nations, 2015) provides a shared blueprint for peace and prosperity for people and planet, now and in the future, and is supported by 17 Sustainable Development Goals (SDGs). SDG 14 focused on water, in particular to "*Conserve and sustainably use the oceans, seas and marine resources for sustainable development*", and is supported by ten targets to achieve this goal. Of particular relevance is target 14.1: "*by 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution*".

The Directive's objectives are relevant in general terms, as they support and contribute towards the objectives of the EU's wider policy goals. However, these goals tend to be more ambitious in relation to environmental protection, with EU political priorities focusing on addressing climate change and pollution prevention.

Stakeholder input also supports the conclusion that the Directives objectives only partially support the EU's objectives and priorities of achieving zero pollution for marine waters in the context of the Green Deal, with just over half of stakeholders (of the survey) agreeing that objectives would need to be modified to remain consistent with the need to achieve zero pollution for marine waters in the context of the European Green Deal (13 out of 25 – see Figure 2).

Figure 2. To what extent do you agree that objectives need to be modified in order to be consistent with the need to achieve zero pollution for marine waters in the context of the European Green Deal?



Source: Stakeholder survey

In terms of **EU citizens' priorities**, marine pollution was identified as important by 40% of EU citizens in 2019 (ranked 4th, increased from 33% in 2017[105]) in the latest Eurobarometer on environmental issues. While marine pollution does not only cover pollution resulting from ships, it can be argued that, in general, the Directive objectives reflect the EU citizen's environmental priorities.

On the basis of the analysis above, the Directive appears to be only partially relevant, with the needs and objectives of the EU wider policy goals being more ambitious in terms of environmental protection. However, it is largely in line with what appears to be an increasing prioritisation of EU citizens towards the protection of the marine environment.

The evaluation matrix is provided in the Figure 3 to Figure 7.

[105] Climate change (53% of respondents in 2019, 51% in 2017), air pollution (46% of respondents in 2019 and 2017) and the growing amount of waste (46% in 2019; 40% in 2017) were the three most important environmental issues on the basis of the responses.

Figure 3: Evaluation matrix - effectiveness

Question	Sub-question	Judgement criteria	Indicator	Data sources
EQ3 - What implementation measures have been introduced in the Member States to implement the Directive? Are there any significant differences in the effectiveness of implementation measures across the Member States? Is national transposition law sufficiently clear and enforceable to work in practice?	EQ3.1 What implementation measures have been introduced in the Member States to implement the Directive?	Member States have introduced specific measures (enacted or amended relevant legislation) to transpose the Directive 2005/35 and its amendments in 2009.	Number of MS which introduced transposition measures as a follow up to the adoption of the Directive and its amendment in 2009 Different types of definitions used by Member States regarding what constitutes an infringement and a minor/major case	North Sea Manual on Maritime Pollution Offences (North Sea Network of Investigators and Prosecutors) (NSNP, 2019) Manual on prosecuting environmental crime in the Baltic Sea region (ENPRO, 2020) EMSA study on the Implementation of Ship Source Pollution Directive 2005/35 in the EU Member States, 2011 Targeted questionnaire Data requests Interviews with Member States competent and enforcement authorities
	EQ3.2 Are there any significant differences in the effectiveness of implementation measures across the Member States?	Member States have adopted relevant procedures to hold natural and/or legal persons liable for illegal discharges (administrative and/or criminal charges)	Differences between Member States in the specific procedures introduced to bring administrative and/or criminal charges against natural and/or legal persons liable for illegal discharges as a result of the implementation of the Directive	North Sea Manual on Maritime Pollution Offences (North Sea Network of Investigators and Prosecutors) (NSNP, 2019) Manual on prosecuting environmental crime in the Baltic Sea region (ENPRO, 2020) Data Request Targeted questionnaire Interviews with Member States competent and enforcement authorities
	EQ3.3 Is national transposition law sufficiently clear and enforceable to work in practice?	Member States have introduced provisions on definition of infringements and penalties and definition of persons that can be held liable that are clear to enforcement authorities and	Differences between Member States in the definition of infringements is clear to enforcement authorities Differences between Member States in the definition of	Sanctions, penalties and fines issued by BONN AGREEMENT and HELCOM Contracting Parties for waste disposal offences at sea (BONN AGREEMENT, 2017)

Question	Sub-question	Judgement criteria	Indicator	Data sources
		other stakeholders.	persons that can be held liable is clear to enforcement authorities	Data Request Targeted questionnaire Interviews with Member States competent and enforcement authorities
EQ4 To what extent has the Directive had a dissuasive effect as regards reducing the number of incidents of discharges of substances covered by MARPOL Annexes I and II and thus contributed to the overall objectives of improving maritime safety and enhancing protection of the marine environment from pollution by ships?	EQ4.1 To what extent has the Directive had a dissuasive effect as regards reducing the number of incidents of discharges of substances covered by MARPOL Annexes I and II?	Evidence suggesting that the implementation of the Directive can be directly linked with a reduction in the number of incidents of discharges for MARPOL Annex I/II	Change in the number of (verified) incidents of discharges of MARPOL Annex I and II substances since 2005 Views of the relevant stakeholders regarding the dissuasive effect of the introduction of criminal penalties for infringements. Views of the relevant stakeholders regarding the dissuasive effect of the enhance enforcement.	CSN data on potential spills and verification results. Data monitoring illegal discharges of MARPOL Annex I and II substances from regional cooperation mechanisms: -HELCOM Response Working Group / SeaTrackWeb -OSPAR Secretariat / OTSOPA Data from Member States on illegal discharges of MARPOL Annex I and II substances Targeted stakeholder survey, data requests and interviews on the impact of the Directive (and CSN) on reducing the number of illegal discharges EMSA (2021) EMTER Report ITOPF (2021) Global trends in oil spills from tankers
	EQ4.2 To what extent has the directive contributed to the overall objective of enhancing protection of the marine environment from pollution by ships and improvement of maritime safety?	Evidence suggesting the Directive has been effective reducing the number and size of (intentional) spills.	Change in the size of the spills and extent of the damage for each individual incident. Change in the identified shipping industry behaviour regarding intentional spills.	EMSA (2021) EMTER report CSN data of potential detections and (where applicable) verified illegal waste discharges database Data monitoring illegal discharges of MARPOL Annex I and II substances from regional and international cooperation mechanisms: -HELCOM Response Working Group / SeaTrackWeb

Question	Sub-question	Judgement criteria	Indicator	Data sources
				-OSPAR Secretariat / OTSOPA -IMO circulars Targeted stakeholder interviews regarding observed changes in the shipping industry's performance and behaviour towards intentional spills. Targeted stakeholder survey, data requests and interviews on the impact of the Directive on protecting the maritime environment
EQ5 To what extent has the Directive been effective in terms of ensuring that infringements covered by the Directive have been made punishable by effective, proportionate and dissuasive penalties? To what extent has the Directive been conducive to a harmonisation at EU level of penalties for such infringements?	EQ5.1 How do the penalties set vary among Member States?	Level of variation in the minimum and maximum penalties foreseen by legislation among Member States	Average level of penalties imposed to natural or legal persons for illegal waste discharges including minimum and maximum level (administrative and criminal).	Study on the Implementation of Ship Source Pollution Directive 2005/35 in the EU Member States (EC, 2011) Review of existing applicable sanctions at national level with regard to illicit ship pollution discharges (REMPEC) Sanctions, penalties and fines for waste disposal offences at sea (BONN AGREEMENT, 2017) COMMISSION STAFF WORKING DOCUMENT, EVALUATION of the DIRECTIVE 2008/99/EC on the protection of the environment through criminal law (EU 2020) Targeted survey Targeted interviews
	EQ5.2 Are the penalties effective, proportionate and dissuasive?	Available evidence suggests that penalties are proportionate to the severity of infringements Level of penalties imposed are dissuasive for future	Proportion of pollution detections for which the polluter is identified and sanctioned Type and level of penalties set	Study on the Implementation of Ship Source Pollution Directive 2005/35 in the EU Member States (EC, 2011) CSN data on potential spills

Question	Sub-question	Judgement criteria	Indicator	Data sources
		infringements	by Member States Extent that stakeholder agree (or not) that penalties applied in the case of infringement are effective proportionate and dissuasive?	and verification results. Evaluation Study on the Implementation of Directive 2008/99/EC on the Protection of the Environment through Criminal Law by Member States (Milieu, 2013) Targeted survey questions regarding the effectiveness, proportionality and dissuasiveness of sanctions Targeted interviews questions regarding the effectiveness, proportionality and dissuasiveness of sanctions Case studies on specific incidents of illegal discharges
EQ6. To what extent has the Directive improved the cooperation between Member States to ensure that discharges of polluting substances are detected in time and that the offenders are identified?	EQ6.1 Has the implementation of the Directive contributed to a cooperation after detection of discharges of polluting substances?	Cooperation in the context of the Directive, have improved the capability to verify discharges in a timely fashion.	Number of potential pollution detections reported and verified.	CSN data on potential spills and verification results. MS reporting on the implementation of the Directive and data requests responses (where available) regarding pollution detections. Specific case studies featuring the use of CSN satellite surveillance. MS authorities views on the effectiveness of CSN to support surveillance activities.

Question	Sub-question	Judgement criteria	Indicator	Data sources
	EQ6.2 To what extent has the implementation of the Directive led to improved exchange of information and evidence among Member States when it comes to attributing discharges to specific ships?	Cooperation activities in the context of the Directive have improved the capability to attribute discharges to specific ships.	Number of Port State Control (PSC) "unexpected or overriding factors" related to incident reports on MARPOL (Annex I and II).	EMSA THETIS database on PSC inspections. Specific case studies featuring cross-border cooperation. MS authorities views on the effectiveness of cross-border cooperation for the identification of potential offenders.
EQ7. To what extent has the geographical scope of the Directive contributed to its effectiveness?	EQ7.1 Has the definition of the geographical scope (as provided in article 3) ensured that all infringements are effectively punished?	How far the current scope ensures that all infringements are effectively punishable	Extent that stakeholders agree (or not) that the geographical scope of the Directive had a positive/negative impact on ensuring that all infringements are punished.	MS reporting on the implementation of the Directive and data requests responses (where available) regarding pollution detections. Input from enforcement authorities via interviews and survey responses.
	EQ7.2 What has been the impact of the inclusion in the scope of the Directive of the high seas in bringing charges against the responsible for illegal waste discharges?	Whether MS can effectively bring charges /sanctions against offenders for infringements occurring on the high seas	Extent that stakeholders agree (or not) agree that including the high seas to the scope of the Directive had a positive/negative impact in terms of bringing charges against infringements committed. Capacity of MS to survey the high seas. Capability of MS to bring charges/sanctions for infringements occurring in the high seas.	Input from enforcement authorities via interviews and survey responses. Input from certain case studies.

Figure 4: Evaluation matrix - efficiency

Question	Sub-question	Judgement criteria	Indicator	Data sources
EQ9. To what extent has the Directive generated costs and benefits for the relevant national authorities?	What, if any, have been the one-off and ongoing costs for national authorities associated with the implementation of the Directive?	There are limited additional costs produced by the Directive's implementation.	Additional costs for authorities caused by the Directive's implementation.	Survey inputs from Member State authorities Interview inputs from Member State authorities
	What, if any, have been the benefits (i.e. savings) for Member State authorities with regards to surveillance and enforcement changes?	The implementation of the Directive has led to more efficient surveillance and enforcement activities.	Surveillance and enforcement cost savings as a result of the Directive's implementation.	Survey inputs from Member State authorities Interview inputs from Member State authorities EMSA data on the cost of EMSA activities (i.e. CSN, knowledge sharing and training activities etc.)
EQ10. Could the same results have been achieved with less funding/lower cost?	What is the cost reduction potential for achieving the same results as currently for specific aspects of the implementation of the Directive?	No/limited scope for significant cost reductions without a negative impact on the achievement of the results in terms of monitoring/surveillance, collection of evidence and infringement procedures for offenders	Existence of cost reduction potential from alternative approaches to implement the Directive.	Interview inputs from Member State authorities
EQ11. To what extent have the accompanying measures listed in Article 10 of the Directive been relevant to the overall objectives of improving maritime safety and enhancing protection of the marine environment from pollution by ships?	To what extent have the information systems developed by EMSA has been relevant to the Directive's objectives?	The introduction of information systems has improved surveillance and enforcement capacity of Member States.	Number of potential illegal discharges identified via CSN (also in which the potential polluter is identified)	CSN data on potential spills and verification results. Stakeholders' inputs through surveys and interviews with national authorities, regional bodies and the industry.
	To what extent have the training activities, common practices and guidelines developed by EMSA supported the achievement of the Directive's objectives?	The new training activities, common practices and guidelines developed have contributed to improving the surveillance and enforcement capacity of Member States. The increased cooperation and information exchange has	Number of knowledge exchange and training sessions delivered by EMSA. Number of guidelines developed delivered by EMSA. Views of the stakeholders on the relevance of the following tools of international	Stakeholders' inputs through surveys and interviews with national authorities, regional bodies and the industry.

Question	Sub-question	Judgement criteria	Indicator	Data sources
		improved the surveillance and enforcement capacity of Member States.	cooperation: -EMSA workshops -Meetings of the CleanSeaNet User Group and the SafeSeaNet Users Training -Regional agreements (such as Bonn Agreement, HELCOM, REMPEC etc.).	
EQ12a. To what extent has the information and support provided by EMSA's maritime surveillance and reporting systems been used to achieve the objective of the Directive?	To what extend have Member States used the EMSA information and support tools to enhance their surveillance and enforcement activities?	High level of use of EMSA information and support tools by Member States.	Number of occasions in which Member States use CSN to trace the responsible for potential maritime pollution Number of Member States using SSN to submit pollution incident reports (POLREPs) Number of Member States using THETIS to develop a risk-based approach to perform inspections in the context of the Directive	CSN data on potential spills and verification results. SafeSeaNet (SSN) data on the number of POLREPs submitted. THETIS data on ship inspection requests/ deficiencies reported. MS interviews regarding the use of CSN, SSN and THETIS
EQ12b. To what extent have the maritime surveillance services and reporting systems hosted by EMSA, such as CSN, SSN and THETIS, proved beneficial for Member States with a view to achieving the objective of the Directive?		The use of the EMSA maritime surveillance services and reporting systems has had a (strong) positive contribution towards the implementation of the Directive. The improvement of satellite technologies, the increase in coverage and precision, and the enhanced response and feedback to satellite alerts contribute to the success of the overall strategy.	Number of illegal waste discharges detected via the use of CSN Number of inspections showing deficiencies to MARPOL Annex I and II reported under Port State Control based on THETIS Number of pollution incident reports (POLREPs) reported by MS to the SafeSeaNetwork Views of Member State authorities regarding the usefulness of CSN, SSN and THETIS in enhancing surveillance and enforcement activities.	CSN data on potential spills and verification results. MS survey and interviews regarding the use of CSN to improve surveillance activities. MS survey and interviews regarding the use of SSN data on vessel positioning in order to identify potential polluters. MS survey and interviews regarding the use of THETIS to organise inspections in cooperation with other Port State authorities. Case studies findings regarding the use of EMSA-hosted systems in surveillance and enforcement activities.

Question	Sub-question	Judgement criteria	Indicator	Data sources
				THETIS data on ship inspection requests
EQ12c. What are the benefits of the CSN service when compared to having multiple national systems for oil spill monitoring?	Has the use of CSN led to improved levels of oil spill detection?	Spill detection capabilities of Member States have improved as a result of the introduction of CSN.	Change in number of spills detected with the introduction of CSN.	CSN data on potential spills and verification results. MS interviews regarding views of the surveillance improvements as a result of the use of CSN.
	Has the use of CSN led to cost savings for Member States?	CSN represents a cost saving compared to the operation of multiple national systems with similar capabilities of oil monitoring.	Cost reduction achieved with the operation of CSN compared to multiple national systems.	MS interviews regarding the cost of national satellite surveillance systems MS and EMSA data request regarding the cost of national satellite surveillance systems and CSN.

Figure 5: Evaluation matrix - Coherence

Question	Sub-question	Judgement criteria	Indicator	Data sources
EQ13. Are there any inconsistencies/overlaps/gaps between the provisions of the Directive and those of other EU instruments?	Are the scope, provisions and activities foreseen by the different Directive provisions in line (consistent) with one another?	There are no inconsistencies between the Directive's scope, provisions and foreseen activities (internal coherence)	Level of consistency (or not) of the different measures/actions foreseen by the Directive	Analysis of the Directive's provisions Interview inputs from Member State authorities and EMSA
	Are the scope, provisions and activities of the Directive in line (consistent) with those of the other EU legislation/policies?	The overall purpose, objectives, scope and relevant provision used in other EU legislation/policy are consistent with those of the Directive.	Level of consistency (or not) of the objectives, scope and measures/actions of the Directive with those of the other EU legislation/policy	Analysis of the EU legal framework Interview inputs from Member State authorities and EMSA
EQ14. Are there any inconsistencies/overlaps/gaps between the Directive and other interventions at international/regional level which have similar objectives?	Are there any of the objectives, scope and provisions of the Directive that are not in line/contradict/overlap with the provisions of other international conventions with similar objectives?	The overall purpose, objectives, scope and relevant provisions of international Conventions (i.e. MARPOL, UNCLOS) are not inconsistent with those of the Directive.	Level of consistency (or not) of the Directive's objectives, scope and provisions with the scope of the MARPOL and UNCLOS conventions.	MARPOL convention UNCLOS convention Relevant court cases (ex. Intertanko case (ECJ C-308/-06) on the interpretation of the SSP Directive vis à vis MARPOL and UNCLOS Conventions) Interview inputs from Member State authorities, EMSA and IMO
	Are there any of the objectives, scope and provisions of the Directive that are not in line/contradict/overlap with the provisions of other regional initiatives/conventions with similar objectives?	The overall purpose, objectives, scope and relevant provisions of regional initiatives/conventions are not inconsistent with those of the Directive.	Level of consistency (or not) of the objectives, scope and provisions of the Directive with the objectives of the regional conventions aiming to protect the maritime environment	HELCOM OSPAR REMPEC Bucharest Commission Copenhagen Agreement Interviews with regional cooperation bodies

Figure 6: Evaluation matrix – EU added value

Question	Sub-question	Judgement criteria	Indicator	Data sources
EQ15. What is the additional value of the Directive compared to what has been or what could have been achieved by Member States at national and/or regional and international level, for example with a view to the cross-border impacts of ship source pollution?	Has the adoption of the Directive resulted in a more harmonised approach of Member States in implementing international regulation compared to what could have been achieved with actions at a national, regional or international level only?	The adoption of the Directive has resulted in a more harmonised approach of Member States in implementing international regulation compared to what could have been achieved with actions at a national, regional or international level only.	Difference in the level of harmonisation of Member State approaches in implementing international regulation with and without the introduction of the Directive.	Interview and survey inputs regarding the effectiveness of EU-level action in harmonising implementation of international regulation.
	Has the adoption of the Directive resulted in improved spill detection capabilities compared to what could have been achieved with actions at a national, regional or international level only?	The adoption of the Directive resulted in improved spill detection capabilities compared to what could have been achieved with actions at a national, regional or international level only.	Difference in the Member State spill detection capabilities with and without the introduction of the Directive.	Interview and survey inputs regarding the effectiveness of EU-level action in improving spill detection capabilities of Member States.
EQ16. Would it have been possible to achieve the same results without the Directive?	How harmonised could the Member States legal framework application be with actions taken at a national, regional and/or international level?	The Directive's introduction led to a more harmonised approach Member States approach in implementing international regulation compared to what could be achieved without it.	Expected level of harmonisation of Member State approaches in implementing international regulation achievable with actions at a national, regional or international level only.	Interview and survey inputs regarding the potential harmonised implementation of international regulation with national-, regional- or international-level actions only.
	What improvements to the Member States spill detection capabilities could be achieved with actions taken at a national, regional and/or international level?	The Directive's introduction led to improved Member State spill detection capabilities compared to what could be achieved without it.	Expected level of spill detection capabilities achievable with actions at a national, regional or international level only.	Interview and survey inputs regarding the potential spill detection capabilities improvement with national-, regional- or international-level actions only.

Figure 7: Evaluation matrix - Relevance

Question	Sub-question	Judgement criteria	Indicator	Data sources
EQ1. To what extent is the transposition into EU law of standards introduced by the International Convention for the Prevention of Pollution from Ships (MARPOL), related to the prohibition to discharge polluting substances into the sea and to the specification of the penalties to be imposed, still required and appropriate?	EQ1.1 To what extent is there an ongoing need for action to enforce the relevant standards and for ensuring the presence of effective enforcement and penalties?	Ship source pollution is still occurring Issues/problems identified at the time of transposition are still relevant and require action	Number of incidents / spills Data on number of cases to show extent that discharges has led to action or not The extent to which stakeholders agree that the existing objectives of the Directive are relevant for the existing/new problems The extent to which stakeholders agree that changes to the objectives of the Directive are needed	ITOPF (medium/large spills) (2021) CSN service / HELCOM / BONN Agreement MS Transposition of the Directive in MSs / MS fiches Stakeholder survey and interview responses on relevance Stakeholder survey and interview responses on relevance
	EQ1.2 Are penalty levels considered enough to dissuade pollution?	Discharges/cases identified lead to action	Number of incidents / spills Proportion of incidents where administrative/criminal case has been charged Stakeholder views on the effectiveness and dissuasiveness of the existing penalties to prevent ship discharges of waste at sea (in different Member States and areas of jurisdiction)	Transposition of directive in MSs / MS fiches (penalties/infringements as set out in MS legislation), EMSA (2011), ENPRO (2020) and NSN (2019) Stakeholder survey and interview responses
EQ2. To what extent is the Directive still relevant for the EU wider policy goals and priorities and for EU citizens?	EQ2.1 To what extent is the Directive's objective to ensure illegal discharges are regarded as infringements/criminal offences, subject to effective, proportionate and dissuasive penalties still relevant in achieving zero pollution for water?	Regarding illegal discharges as infringements/criminal offences has led to an improvement in water quality.	Analysis of relevant policy documents to logically assess relevance of the Directive. Stakeholder views on the appropriateness of the objective of ensuring effective, proportionate and dissuasive penalties for illegal discharges across EU Member States with respect to achieving zero pollution for water	Analysis of EU policy documents: EU Green deal, Commission Communication Pathway to a Healthy Planet for All EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil' Marine Strategy Framework Directive (MSFD) UN's Agenda for Sustainable Development
	EQ2.2 To what extent is the	Ensuring cooperation and	Stakeholder views on the	

	Directive's objective of ensuring cooperation and exchange of relevant information between actors/cross-border co-operation still relevant in achieving zero pollution for water?	exchange of relevant information between actors/cross-border cooperation has contributed to improvement in water quality	appropriateness of the objective of ensuring cooperation and exchange of relevant information with respect to achieving zero pollution for water	Eurobarometer 501 Stakeholder survey and interview responses

ANNEX IV. OVERVIEW OF BENEFITS AND COSTS

Table 1: Overview of costs and benefits identified in the evaluation

		Citizens/Consumers		Businesses		Administrations	
		Quantitative	**Comment**	**Quantitative**	**Comment**	**Quantitative**	**Comment**
Benefits							
Direct benefit – environmental quality	One-off	-	-	-	-	-	-
	Recurrent	Not quantified	Environmental benefits due to reduced pollution discharges can be expected but they could not be quantified in lack of data on actual level of illegal discharges.	-	-	-	-
Indirect benefit –Health	One-off	-	-	-	-	-	-
	Recurrent	Not quantified	Health benefits as a result of reduced water pollution are expected but could not be quantified in lack of data on actual level of illegal discharges.	-	-	-	-
Costs							

Direct compliance cost – Adjustment costs	One-off	-	-	-	-	-	-
	Recurrent	-	-	-	-	EUR 200,000 annually	Costs for EMSA for training and knowledge sharing activities
	Recurrent	-	-	-	-	EUR 5.17 million annually	Costs for EMSA for operating CleanSeaNet and sharing alerts with Member States
Direct compliance cost – Administrative costs	One-off	-	-	-	-	-	-
	Recurrent	-	-	-	-	EUR 70,048 annually	Costs for maritime authorities related to reporting on the Directive's implementation to the European Commission
Enforcement costs	One-off	-	-	-	-	-	-
	Recurrent	-	-	-	-	EUR 13,000 annually	Costs for maritime authorities related to information exchange procedures (i.e. uploading pollution incident reports (POLREPs) in SafeSeaNet and THETIS inspection requests)
	Recurrent	-	-	-	-	EUR 105,470 annually	Costs for maritime authorities related to logging feedback data on CleanSeaNet alerts

Indirect costs	One-off	-	-	-	-	-	-
	Recurrent	-	-	-	-	-	-

TABLE 2: Simplification and burden reduction (savings already achieved)						
	Citizens/Consumers/Workers		Businesses		Administrations	
	Quantitative	Comment	Quantitative	Comment	Quantitative	Comment
Direct compliance costs savings: adjustment costs savings - recurrent	-	-	-	-	EUR 7.7 million annually	Annual costs savings due to having one satellite surveillance service (CleanSeaNet) instead of numerous national services.

ANNEX V. STAKEHOLDERS CONSULTATION - SYNOPSIS REPORT

This annex provides a summary of the outcomes of the consultation activities, which have been carried out for the evaluation and Impact Assessment of the Ship-Source Pollution Directive, including in the context of the external support study. The impact assessment and the ex-post evaluation of the Ship-Source Pollution Directive were performed in a back-to-back manner (i.e. the evaluation and impact assessment have been launched at the same time) in 2021-2022.

This annex provides the range of stakeholders consulted, describes the main consultation activities and also provides a succinct analysis of their views and the main issues they raised.

The aim of the consultation activities was to collect information and opinions from stakeholders on the achievements of the Directive, its added-value, key problems and associated drivers, definition of relevant policy objectives linked to those problem areas and the identification, definition and screening of policy measures that could eventually be incorporated into policy options for the Impact Assessment, as well as gather information and opinions on their likely impacts.

1. Overview of consultation activities

A consultation strategy, covering all stakeholder consultation activities, including those carried out as part of the support study, was developed early in the process. The consultation activities were aimed at a range of stakeholders dealing with the identification, verification and prosecution of ship-source pollution in EU and industry representatives (including relevant associations of ship-owners and port operators), as well as non-EU players (e.g. flag States). The objective of the consultation activities was to collect information and opinions on the current implementation and enforcement of rules on illegal discharges from ships as well as gather evidence on expected costs and benefits of draft policy measures.

Consultation activities have taken place since the publication of the combined evaluation roadmap/ inception impact assessment published in May 2021 and continued until the stakeholder validation workshop in September 2022.

As part of the initial feedback mechanism, stakeholders had the opportunity to provide feedback on the combined evaluation roadmap/ inception impact assessment[106] via the relevant website. The Commission received eight responses, during June 2021. Six responses were provided by NGOs and two by business representatives.

Afterwards, the following consultation activities were carried out:

– An Open Public Consultation (OPC), organised by the European Commission, which ran from 9 December 2021 to 3 March 2021. The OPC put forward questions on both the Impact Assessment and the evaluation of this Directive.

[106] European Commission (2021) Combined Evaluation Roadmap/Inception Impact Assessment. Revision of the Directive on ship-source pollution

– Three rounds of interviews with EU level representatives of key stakeholders organised by the consultant in charge of the external support study, running intermittently from November 2021 to September 2022, to fill specific information requests, in support of the evaluation and to refine the overall problem definition and possible policy options.

– Two targeted stakeholder surveys to gather specific information, one for the evaluation and one for the Impact Assessment, organised by the consultant in charge of the external support study, running, respectively, from December 2021 until February 2022 and June until July 2022.

– Additional targeted consultation activities organised by DG MOVE in order to consult the Member States and key stakeholders on the different policy measures and to validate the emerging and final results of the support study to the Impact Assessment in terms of the quantification of impacts. These activities took place in the context of a meeting of the EU Committee on Safe Seas and the Prevention of Pollution from Ships (2 June 2022), meetings of the European Sustainable Shipping Forum (18 May 2022) and its subgroup: Waste from Ships (22 March 2022 and 4 June 2022), the EU/EEA Maritime Transport Directors (3 October 2022), the North Sea Network of Investigators and Prosecutors (25 April 2022), HELCOM (8 June 2022) and BONN Agreement meetings (21 September 2022), an informal meeting with the Regional Sea Conventions (29 June 2022) and an informal meeting with ECSA (21 September 2022). A final workshop to validate the conclusions of the support study attended by Member State, NGOs and industry representatives was also organised (22 September 2022).

The information collected from stakeholders was key in allowing the Commission to evaluate the Directive, define the policy options and assess and compare their economic, social and environmental impacts. As result, the consultations informed on which policy option is likely to maximize the benefits/costs ratio for the society and achieve a more effective and efficient mechanism to discourage ship-source pollution in the EU. Findings from those processes complemented the desk research carried out in the context of the external support study.

Methods have been adapted to take account of the development of the COVID-19 pandemic. For this reason, interviews and meetings were held by videoconference.

Table 1. Overview of responses to different stakeholder consultation activities

	Number of invitees	Number of responses	Topics covered
Open public consultation	Open	30	Implementation of the Directive – successes and problems
Exploratory interviews	9	6	Problem assessment
Targeted Evaluation interviews	42	31	Implementation of the Directive – successes and problems
Targeted Impact Assessment interviews	50	26	Policy measures / options / impacts
Targeted Evaluation survey	58	25	Implementation of the Directive – successes and problems
Targeted Impact Assessment survey	53	3	Policy measures / options / impacts
Stakeholder workshop	Open	86	Policy measures / options / impacts

The full list of stakeholders who participated in the various consultation activities is included in the external support study. There were no campaigns[107] identified in the responses neither to the targeted nor the public consultation. The information and views received in the context of the public consultation were taken into consideration for the elaboration of the Evaluation and Impact Assessment report, but they cannot be regarded as the official opinion of the Commission and its services (and thus does not bind the Commission) and the contributions cannot be considered as a representative sample of the EU population.

2. Limitations of the Stakeholder consultation

Stakeholders were not very responsive to the various consultation activities. There were only **30 responses** to the open public consultation and the input to each of the remaining consultation activities did not exceed 31 participants. Often the responses were delayed or answers were incomplete. The most attended consultation activity was a 1-day online stakeholder workshop organised at the time of the draft final report to discuss preliminary findings of the evaluation and Impact Assessment of the SSPD with 86 participants. Invitations for the workshop were targeted at experts from all relevant stakeholder groups. Since all relevant stakeholder groups have provided their views and positions to the various consultations, a comparison and analysis of opinions gathered from all consultation activities was possible. Nevertheless, it was difficult to identify trends from the feedback in the consultation due to the low response rate.

It was particularly difficult to gather input from stakeholders on possible expected **costs and benefits** of implementing the proposed measures, as well as estimations on the **number of prosecutions** because of the scarcity and incompleteness of existing data.

The data available from the interviews and surveys on the evaluation and Impact Assessment was not sufficiently robust to make a complete analysis for all Member States. In certain instances, the responses of the Member States were not very consistent. The level and quality of evidence gathered varies. For some evaluation criteria, in particular relevance and coherence, the evidence gathered was satisfactory. Availability and quality of data was a challenge affecting in particular the assessment of the effectiveness and efficiency criteria.

Where quantitative data was available, it was used to make estimations and was complemented by stakeholder opinions and positions. Whenever possible, information gathered from different sources, including input from stakeholders were compared and triangulated. Where available data and literature was limited, consultation responses were relied upon to answer the evaluation questions and are indicated throughout this report.

3. Analysis of the key results of the stakeholder consultation

The remainder of this annex presents key findings from the analysis of stakeholder contributions to the consultation process. They are structured around the main elements of the intervention logic, including the problem areas and their drivers, the policy objectives as well as the key aspects of the design of possible policy measures. The technical support study for this evaluation and Impact Assessment contains the detailed

[107] 'Campaign' – e.g. NGO based in a Member State may call on members to respond in the same way to a consultation for all questions.

presentation of findings from the targeted consultation activities. Furthermore, the factual summary of public consultation contains concise information in the form of graphs and figures.

3.1. Current scope and implementation

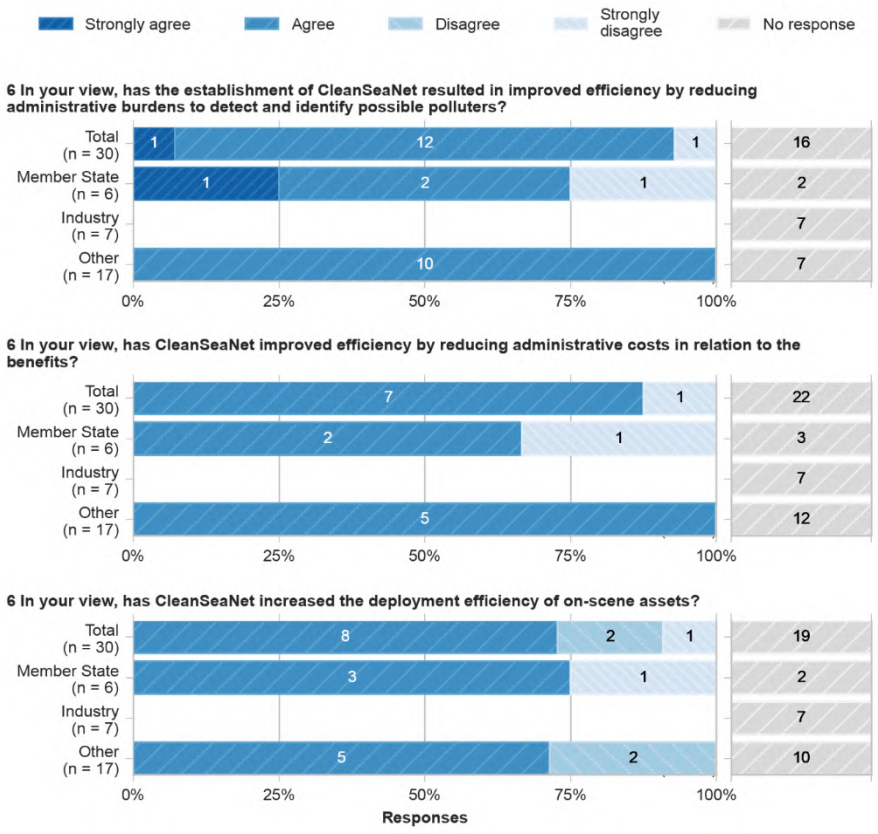
– Need for improved maritime transport safety and ship-source pollution prevention (protection of the marine environment)

Stakeholders consulted for the evaluation largely agreed that this issue is still relevant, supported by 24 (out of 31) stakeholders interviewed and 23 (out of 25) responses to the evaluation survey. It was acknowledged by stakeholders interviewed, including Member State authorities, international bodies and the maritime industry, that whilst shipping is considerably safer than prior to the Directive and there are fewer oil spill incidents partially due to improvements in safety, technology and training standards, ship-source pollution is still occurring, and additional improvements are still required. In this respect, 18 respondents (out of 30) to the public consultation stated that they do not find the Directive effective in terms of protecting the marine environment from illegal discharges from ships.

- Surveillance and monitoring

Generally, stakeholders are of the opinion that EMSA systems and information exchange between Member States have improved pollution detection in the EU over the years. Ten Member State authorities interviewed (out of 14) agreed that the CleanSeaNet service has increased the efficiency of the implementation of the Directive. Out of the 28 replies on the question on surveillance in the public consultation, 13 viewed CleanSeaNet as an efficient tool (the other half responded 'I don't know' including all industry representatives). More public input on CleanSeaNet is shown in the figure below.

Figure 8. Open public consultation on CleanSeaNet and efficiency



On the other hand, discharges are not always detected on time. Eleven Member State respondents to the evaluation survey (out of 19) stated that their authorities are not using EMSA tools (e.g. CleanSeaNet alerts) to their full extent. Only eight of the authorities interviewed (out of 19 Member States) agreed that EMSA tools are used effectively in their country.

- *Cooperation between Member States, information exchange and enforcement*

There is consensus among Member State authorities interviewed that cooperation and information exchange activities led to improved capacity towards detection of illegal discharges. Also, seven industry responses to the public consultation (out of 13) indicated that the Directive has contributed to some extent to increased cross-border cooperation between Member States law enforcement and judicial authorities. Moreover, cross-border cooperation between Member States was perceived by the participants of the stakeholder workshop as the largest benefit of the current Directive, as shown in the figure below.

Figure 9. Stakeholder views from the stakeholder workshop on benefits of the Directive

The main issues hindering the detection of illegal discharges and identification of polluter, as identified by stakeholders consulted, are listed below:

– insufficient resources or unavailability of aerial means for oil spill detection;

– limitations to provide near real-time identification;

– limited resources (e.g. patrol ships) for sample collection, especially in areas distant from the coast;

– heavy ship traffic areas and short duration of operation discharges; and

– technical challenges due to the size of the area covered (particularly for EEZ and high seas).

There is a difference in opinion between the industry and the remaining stakeholders on enforcement. Four responses to the public consultation from the industry (out of 6) indicate that they consider that the same results of enforcement could have been achieved largely without the Directive and through international legislation. In the stakeholder workshop, only 11 participants voting (out of 51) indicated that MARPOL is enough and the Directive is not needed. Industry and 'other stakeholders to the OPC' largely agree that the same result would not have been reached without the Directive (8 indicated 'not at all' and 8 'to a small extent, out 16 responses).

– Discrepancies in penalties related to ship-source pollution among EU Member States

The majority of the stakeholders interviewed (including Member State authorities, the maritime industry and regional/international bodies) agreed that penalties are not harmonised in the EU. Thirteen respondents to the survey (out of 25) agreed that discrepancies in penalties for infringements related to ship-source pollution among EU Member States have an uneven dissuasive effect. This effect was also confirmed by five Member State authorities and three stakeholders from the maritime industry interviewed. In response to these inconsistencies, stakeholders see the need for more harmonisation.

– Effectiveness, proportionality and dissuasiveness of penalty procedures

There are contradicting opinions on whether the intervention was successful to achieve its objective to ensure that persons responsible for discharges of polluting substances are subject to effective, proportionate and dissuasive penalties. Eight Member State authorities interviewed (out of 16) considered criminal penalties proportionate and dissuasive as a measure. Similar results were provided to the evaluation survey, where eleven stakeholders responding agreed with criminal penalties were proportional and dissuasive (out of 25). Still, one Member State authority stated that criminal procedures are usually impractical and rarely produce the desired outcome. Other stakeholders, who provided input to the interviews and/or the survey, including industry, workers' representatives and NGOs, suggested that criminal penalties are not considered proportionate in any case and have no dissuasive effect in preventing cases of ship-source pollution. The industry representatives made this point also during the stakeholder workshop. Regarding penalties, including criminal penalties, as an effective way to ensure compliance with international standards for ship-source pollution, 19 respondents to the public consultation (out of 28) agreed that penalties are an effective way to ensure compliance. Contradictory, only two stakeholders (out of 30 who responded to the public consultation) indicated that the introduction of penalties in national legislation led to operators taking measures to comply with legislation to protect the marine environment. Based on the results of the consultation it is not possible to conclude whether penalties are effective, proportionate and dissuasive, or not.

– Costs of the current Directive

Stakeholders were asked whether they considered that, the Directive and the associated changes to the national legislation have led to an increase in the time and costs associated with maritime pollution surveillance and enforcement activities. Eight Member State authorities (out of 14) interviewed indicated that there is no change associated with these costs. Six Member State authorities (out of 25 responses to the evaluation survey) indicated a slight increase in the costs associated with maritime pollution surveillance and enforcement activities. Two interviewed Member States indicated that the implementation of the Directive through national legislation did not require any additional cost as provisions (or most of them) were already in place before the implementation of the Directive in their country. Three Member State authorities (out of 25 responses to the survey) indicated that there has been a significant increase and pointed to the costs of on-site verification of CleanSeaNet alerts linked to the increase in the frequency of verification activities.

Ten Member State authorities interviewed (out of 14) agreed that CleanSeaNet service has increased the efficiency of the process; four of which indicated that this has not led to a reduction in costs because of increased frequency of verification activities. Seven of the respondents to the public consultation (out of 30) agreed that the establishment of CleanSeaNet service has resulted in improved efficiency by reducing administrative burden.

3.2. Problem areas and policy objectives

This section provides an overall view of stakeholder's inputs on the proposed definition of problem, its underlying drivers, and on the objectives of the policy intervention under consideration.

– Problem definition: ships illegally discharging polluting substances to the sea rarely face effective and dissuasive penalties

Seventeen of the stakeholders interviewed (out of 26) agreed with the overall definition of the problem[108] that ships rarely face adequate penalties. Two Member State authorities disagreed with the identified problem. These authorities indicated that, for MARPOL Annexes I and II, the implemented regimes have been sufficient and effective so far.

The representatives of the maritime industry, ECSA and ICS, disagreed with the identified problem, referring to no evidence available on an increase in ship-source pollution in EU waters in the recent years. This has been reemphasized by them in the interviews and in the stakeholder workshop. They stated that there is effective international legislation in place to prevent and control illegal pollution from ships. The MARPOL Convention, as per their statement, allows parties to establish sanctions "of adequate severity" (Article 4 of MARPOL) to discourage violations of the Convention, and draws a fundamental distinction between accidental and deliberate pollution. ECSA and ICS also pointed to UNCLOS (Art. 230) with regards to supporting MARPOL in the context of monetary penalties as the most common sanction for pollution in areas beyond the territorial seas. IPTA (International Parcel Tankers Association) also disagreed with the identified problem, as they consider it to be unlikely for ships to illegally discharge polluting substances into EU seas noting that effective and dissuasive penalties are already in place, as well as the risk of reputational damage for a shipping company as a result of a ship-source pollution incident, which is likely to have a preventive effect.

In brief, industry disagrees with the problem definition but most of the remaining stakeholders agree that ships illegally discharging pollutants at sea rarely face effective and dissuasive penalties.

– PD1: *The Directive's scope, which is limited to Annexes I-II of the MARPOL Convention, does not cover all relevant polluting substances.*

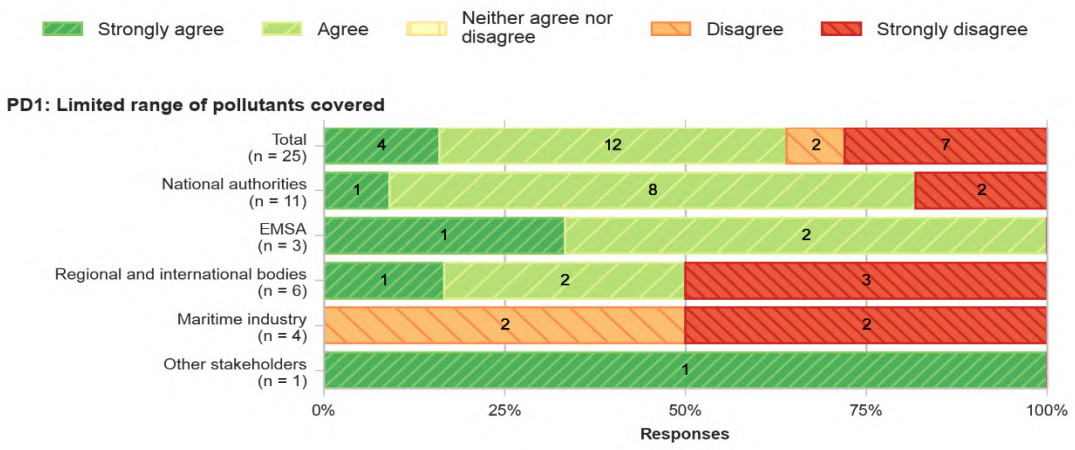
Sixteen stakeholders interviewed (out of 26) agreed or strongly agreed with problem driver 1 on the limited range of pollutants covered[109]. On the other hand, 9 stakeholders disagreed or strongly disagreed with the fact that the limited range of pollutants covered is a problem driver[110].

Figure 10. Stakeholder views from the IA interviews on PD1: Limited range of pollutants covered

[108] This includes eight out of 12 of the MS authorities interviewed.

[109] Stakeholders that agreed or strongly agreed include nine MS authorities, three European Commission bodies, three regional/international organisations and one environmental NGO.

[110] These include two MS authorities, three regional/international organisations and four maritime industry stakeholders.



Furthermore, 23 out 28 respondents to the OPC selected the option 'Update the Directive to include amendments to the MARPOL Convention putting in place stricter rules for discharges of waste from ships at sea' as a relevant aspect that should be addressed by a revised Directive.

On the other hand, maritime industry stakeholders – such as ECSA, ICS or BIMCO – disagreed, as, according to them, all relevant polluting substances are already covered under the MARPOL Convention. Therefore, expanding the range may have a limited effect in terms of polluting substances that are subject to penalties if illegally discharged into EU waters. Also, they pointed to the difficulties of the practical implementation of this extended scope.

In the stakeholder workshop, the majority of participants 29 (out of 51 respondents) voted for extending the scope of the Directive to include all MARPOL Annexes as shown in the figure below.

Figure 11. Stakeholder views from the workshop on PD1: Limited range of pollutants covered

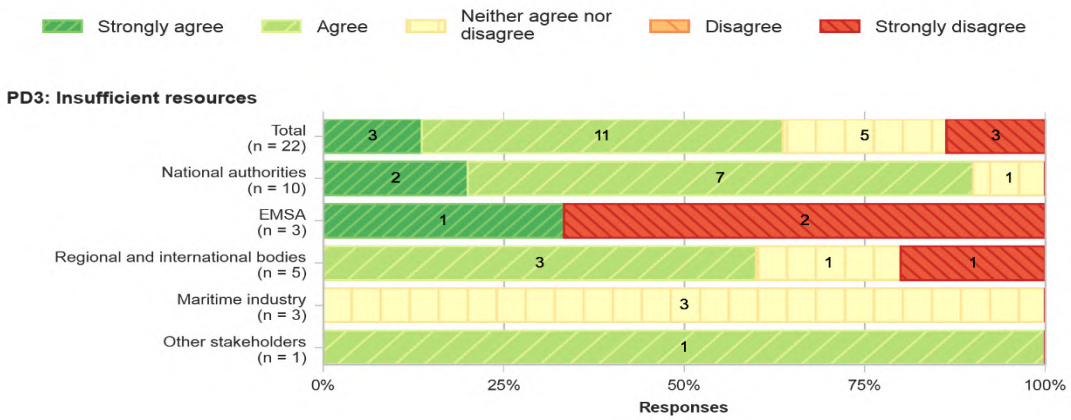
– PD2: *Resources and/or expertise to effectively identify, verify and prosecute pollution from ships are inconsistent across the EU and generally insufficient.*

Fourteen stakeholders interviewed (out of 26) agreed or strongly agreed with problem driver 2 on insufficient resources[111]. In addition, three stakeholders strongly disagreed

[111] Those who agreed with problem driver 2 included nine MS authorities.

with the insufficient resources being a problem driver, and five stakeholders[112] indicated that they neither agree nor disagree with problem driver 2.

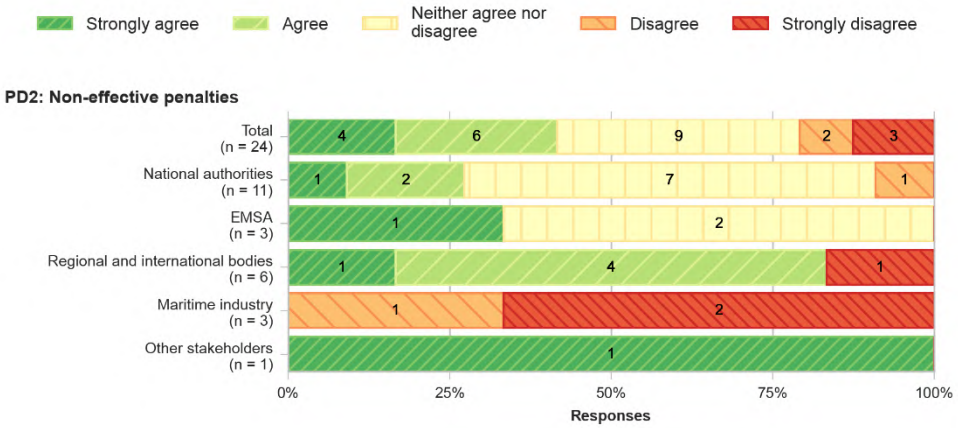
Figure 12. Stakeholder views on PD2: insufficient resources and expertise across Member States



– PD3: *Penalties applied by Member States for illegal pollution from ships do not consistently discourage polluters.*

As presented above, there is contradicting opinions on the dissuasive effect of the penalties. Ten out of 26 stakeholders interviewed agreed or strongly agreed with problem driver 3 on penalties not being effective[113]. However, the views on PD3 were quite diverse, as shown in the figure below.

Figure 13. Stakeholder views on PD2: non-effective penalties



Three Member State authorities interviewed indicated that penalties imposed in their respective countries are considered effective and proportionate to the nature of the pollution. Additionally, one Member State authority disagreed with non-effective penalties being an issue and instead pointed to the limited ability to identify ships as the polluter as a relevant issue hindering the enforcement of the Directive.

[112] Those who neither agreed nor disagreed with problem driver 3 included one MS authority, one regional/international body and three maritime industry stakeholders.

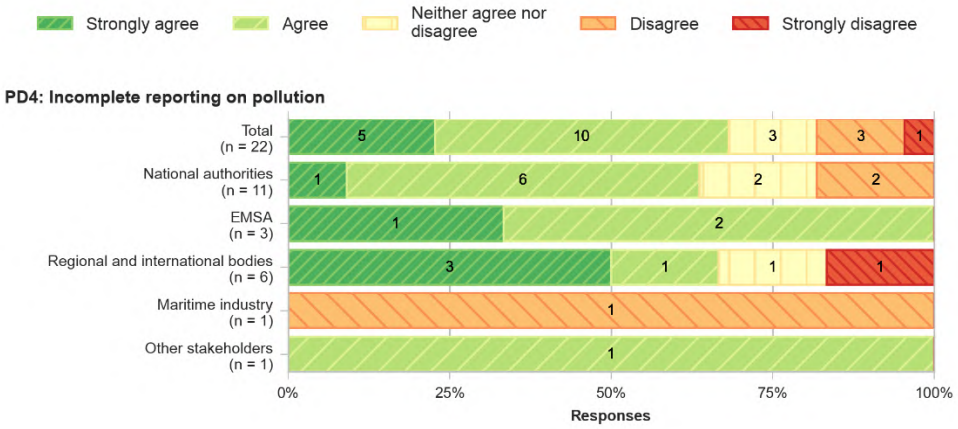
[113] Stakeholders that agreed or strongly agreed include three MS authorities, five regional/international organisations and one environmental NGO.

Furthermore, 23 (out 28) respondents to the OPC selected the option 'Improve the effectiveness of law enforcement within Member State' as a relevant aspect that should be addressed by a revised Directive.

– PD4*: Incomplete reporting by Member States on pollution events and on follow-up activities results in the lack of information on ship-source pollution across the EU.*

Fifteen stakeholders interviewed (out of 26) agreed or strongly agreed with problem driver 4 on incomplete reporting on pollution. Four stakeholders disagreed or strongly disagreed with the incomplete reporting on pollution being a problem driver, and three stakeholders indicated that they neither agree nor disagree with problem driver 4.

Figure 14. Stakeholder views on PD4: incomplete reporting by Member States results in the lack of information on ship-source pollution



Furthermore, 24 (out 28) respondents to the OPC selected the option 'Improve the use and coordination of maritime surveillance and digital reporting systems' as a relevant aspect that should be addressed by a revised Directive.

3.3. Policy measures

The table below summarises stakeholder opinions on each of the policy options and the subsequent subsections give more details on key areas of interest.

Table 2. Stakeholder opinions on policy measures

Policy measure	Stakeholder views	Summary
PMc1 - extension of the scope of the Directive	In the stakeholder workshop 29 out of 51 participants that voted were of the opinion that the scope of the revised Directive must be extended. Twelve Member State (MS authorities) were interviewed and had positive opinions.	Stakeholders in favour
PMc2 - EMSA training and guidance	Sixteen out of 17 stakeholders who provided a response to a question on this measure in the survey (including 11 MS authorities, EMSA and four regional/international bodies) identified guidance and training as a relevant and suitable policy measure.	Stakeholders in favour
PMc3 - expert group	Eleven of the 17 stakeholders who provided a response to a question on this measure in the interviews (including seven out of 12 MS (BE, HR, FI, DE, MT, NL and ES), EMSA and three regional/international bodies) supported holding regular meetings of a dedicated platform. In an ESSF subgroup meeting on waste from ships 9 out of 25 participants that voted were of the opinion that	Stakeholders in favour

Policy measure	Stakeholder views	Summary
	issuing guidelines by the Commission on collection of statistical data would foster the collection of information about illegal discharges from ships.	
PMc4 - information from whistle-blowers	Two stakeholders identified the measure relating whistle-blower provisions suitable for the objective of the Directive. However, other stakeholders endorsed the combination of PM5, PM6, PM7, and PM8, albeit not specifically naming this measure. Generally, stakeholders stated that they lacked sufficient knowledge of the whistle-blower provision to provide an answer on this question.	Stakeholders lack sufficient knowledge to have an opinion.
PMc5 - enhancement of Integrated Maritime Services	In the stakeholder workshop 23 out of 41 participants that voted were of the opinion that this measure would make the biggest difference in increasing cooperation between Member States and information exchange. In addition seven out of the 17 stakeholders (including six MS authorities and one regional body) that responded to this question in the interviews supported this measure. These stakeholders emphasised the value of EMSA tools and the potential advantages of further integration.	Stakeholders in favour
PMc6 - clarifications on liability regime	Generally, there was a lack of sufficient knowledge on the EU liability regime. Only six out of the 21 stakeholders consulted (three MS, three regional bodies) provided their views on this measure in the interviews. Two of them (two MS authorities, BG and CY) agreed with this measure, as they considered that the proposed additional text clarifies the principles stated by international conventions. On the other hand, two industry representatives (ECSA/ICS) stated that the adoption of this measure would be only a partial improvement.	Low stakeholder support, low knowledge and no opposition
PMc7 - obligation to log if and how CleanSeaNet alerts have been verified	Five out of the 12 stakeholders (including four MS authorities and one regional body) who provided a response in the interview identify challenges associated with the implementation of this measure. One MS authority (BG) disagreed with this measure, as they considered that it could be difficult to implement from an operational perspective. Two MS authorities (MT, ES) also highlighted the challenges and additional administrative burden that this policy measure could impose on national authorities if implemented. Furthermore, another MS authority (RO) indicated that there will probably issues implementing these measures, although they are not expected to be significant.	Low stakeholder support and some minor opposition
PM1 - 60% verification rate for CleanSeaNet alerts	In the stakeholder workshop only 6 out of 41 participants that voted supported this measure. 15 out of 30 participants that voted were of the opinion that the verification of CleanSeaNet alerts should remain voluntary and not mandatory as foreseen in this measure. The main issue identified in interviews was the additional resources that would be needed to follow up on every possible pollution incident detected by CSN service.	Stakeholders mainly against
PM2 a & b – type of penalties	No information was provided by stakeholders regarding this measure.	Stakeholders lack sufficient knowledge to have an opinion.
PM3a – level of penalties containing criteria	Six out of the 16 stakeholders interviewed (including four MS authorities (DK, FI, MT, RO) and two regional bodies) supported this measure. Three of these stakeholders underlined that this measure would act in favour of the harmonisation of the level of penalties and strengthen the coordination between MS.	Low stakeholder support but no opposition
PM3b – level of penalties containing	Four out of the 16 stakeholders (including one MS authority (MT), two regional bodies and one NGO) who provided a response in the interviews supported this measure. However, three MS authorities (BE, NL, ES) stated that this measure would be challenging to	Low stakeholder support but no opposition

Policy measure	Stakeholder views	Summary
values	implement in practice.	
PM4 - reporting	In the stakeholder workshop 16 out of 41 participants that voted were of the opinion that this measure would make the biggest difference in increasing cooperation between Member States and information exchange. In addition, in an ESSF subgroup meeting on waste from ships 13 out of 25 participants that voted were of the opinion that a regular update of an online platform using a format harmonised with regional and IMO reporting requirements would foster the collection of information about illegal discharges from ships.	Stakeholders in favour
PM5a – information to the public on national websites	Five out of the 12 MS authorities consulted expressed their disagreement with this measure. One MS authority indicated that they do not see the need for a website to be developed at national level, as they believe it would be enough to provide the information through the reporting portal DONA. One MS authority (CY) indicated that the measure is not considered as a measure that could have a significant impact to the objectives of the SSP Directive.	Stakeholders against
PM5b– information to the public on EU website	Five out of the 12 MS authorities consulted agreed with the measure related to the EMSA/European Commission providing public information based on the information reported by Member States on the enforcement of the SSP Directive.	Low stakeholder support but no opposition

– Scope of the future Directive

The stakeholders consulted during the public and targeted consultations, with the exception of industry, were in favour of broadening the scope by including MARPOL Annexes III, IV, V and VI discharge water from scrubbers discharged at sea. A revised Directive would be better adapted to the pace of international developments in the of field pollution prevention if it covers MARPOL Annex I to V substances and Annex VI discharge water from scrubbers into sea. This would also help align with the ambition of the European Green Deal. This was supported by 8 (out of 10) stakeholders during the inception interviews; 15 (out of 31) stakeholders interviewed (including 8 Member State authorities, and 4 regional/international bodies and 3 stakeholders from the maritime sector) as well as 8 (out of 11) responses to the evaluation survey (including input from 8 Member States, 2 NGOs and 2 business organisations/associations). 29 respondents (out of 51) in the stakeholder workshop voted for the extension of the scope to cover Annex I-V and Annex VI discharge water from scrubbers to water with strong support in interventions from 3 NGOs (EIA, Surfrider and IFAW) and the support of one representing industry (Euroshore). The same message came from the public consultation where 23 (out of 28) respondents saw the need to expand the list of pollutants covered by the Directive (including 4 Member State authorities, 8 citizens, 7 NGOs, 2 academia and 2 industry stakeholders), while 5 respondents (all but one representing maritime industry) disagreed. The industry questions the added value in extending the scope of the SSP Directive to further annexes of MARPOL. Their argument is that the MARPOL Convention is already ratified by all Member States who are parties to MARPOL.

The voice of environmental NGOs is consistent in the message that the Directive offers effective tools to prevent pollution and therefore should be extended to polluting substances of concern that are currently not covered by MARPOL. This was supported by IFAW and Surfrider and reemphasised in the stakeholder workshop.

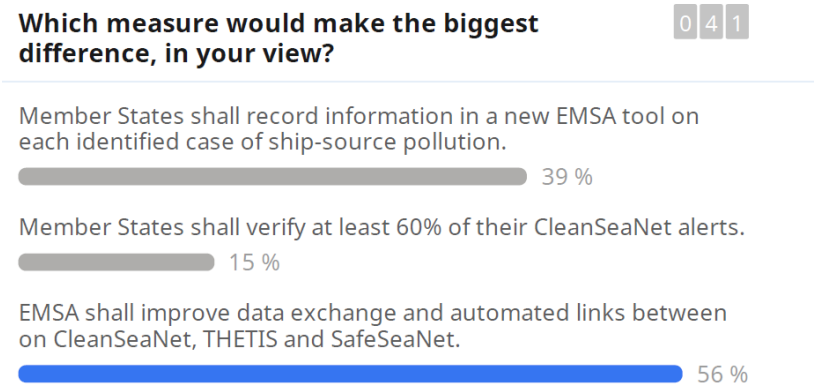
Out of the 26 stakeholders whose input was summarised, six Member State authorities noted a preference towards extending the scope of the Directive to Annex III-V substances and Annex VI residues from scrubbers discharged to the sea. Four Member State authorities were in favour of supporting the alignment of the Directive with all MARPOL Annexes and including air emissions of Annex VI (sulphur and nitrogen oxides).

In brief, Member States generally are in favour of broadening the scope of the Directive to more polluting substances in line with MARPOL, however there is not consensus on the matter. Also, see *PD1* above for complementary information.

– EMSA providing highly specialised support

As per conclusions of the evaluation, Member States see EMSA's support and dedicated EU-wide tools as a great added value of the Directive. When asked during the stakeholder workshop on which EMSA-specific measure could make the biggest difference in the future, the participants chose first the optimised interactions of CleanSeaNet, SafeSeaNet and THETIS (23 out of 41 respondents) and second a new dedicated EMSA platform for information collection and exchange (16% out of 41 respondents). See figure below.

Figure 15. Stakeholder views from the stakeholder workshop on EMSA support tools



One interviewed Member State authority welcomed new features that could help the integration between systems to avoid the duplication of data/information/reporting. These systems are currently isolated, so it would be helpful to be able to access the data from a single source. The Romanian authorities added that all useful information should be integrated and/or automated. French authorities agreed that more links are needed for Annex VI between THETIS, THETIS EU and SafeSeaNet, but confidentiality of data and possibility of alerts being wrong (false positives) must be addressed.

Regarding potential issues or challenges that may arise from the implementation of EMSA specific measures, the Finnish authorities identified potential issues related to restricted access depending on the position/responsibility of the Member State authority. For instance, not being able to access THETIS information if not directly involved in port inspections, although involved in other aspects of ship-source pollution incidents. Also, EUROSHORE pointed to a potential overlapping with other already ongoing expert groups on maritime issues.

Two Member State authorities interviewed recognised the importance of introducing mandatory requirements for Member States to follow up on possible pollution incidents detected by CleanSeaNet service.

Three Member State interviewed indicated they support the idea of EMSA providing public information based on the information reported by Member States on the enforcement of the SSP Directive. The Cypriot authorities stated that this would be most suitable, although a combination of all measures, except the measure on Member States developing national websites with information on pollution incidents and follow-up activities, would be preferable.

On the other hand, one Member State considered that these measures would not have a relevant impact on reducing the level of illegal discharges at sea. Also, ENPRO indicated that all policy measures proposed to address PD4 on incomplete reporting are relevant, although those related to the availability of public information might not have a significant impact on the objectives of the SSP Directive.

– More guidance at EU level

Thirteen stakeholders interviewed (13 out of 26)[114] supported policy measures on guidance and training activities on detection to facilitate evidence gathering for ship-source pollution offences to authorities responsible for verification and prosecution. The Spanish authorities also considered training relevant, as the limited resources and expertise in the national administration is not because of the lack of personnel, but due to the lack of know-how in ship-source pollution matters and procedures. They consider that training should be aligned and coordinated with homogenised principles and procedures.
In terms of identifying the most suitable policy measures to address Problem Driver 2, stakeholders consulted mainly pointed to the potential usefulness and effectiveness of a combination of all the measures proposed[115]. It was mentioned that Expert Groups had been recognised as an efficient way to move forward with new ideas related to a specific topic.
With regards to the priority topics that should be the focus of the expert group, stakeholders identified the following:

– **Sharing of best practices**: Five stakeholders who responded to this question (out of 10) identified this as a relevant topic to be covered by the Expert Group.[116]

– **Enhance harmonisation of the implementation of the Directive**: The Bulgarian authorities indicated that a work group could steer the development of guidance documents and ensure that the experts are available for developing guidance, presenting at incidents and experience sharing. EUROSHORE also supported this as a relevant topic to be covered by the Expert Group.

– **Coordination with other relevant regulations**: EMSA indicated that the Expert Group should work in coordination with the established regional networks to harmonise the enforcement of relevant regulations addressing ship-source pollution.

[114] These include nine MS authorities, EMSA and two regional/international bodies
[115] These include views from nine MS authorities, EMSA and two regional/international bodies
[116] These include 4 MS authorities and one regional/international body.

– **Exchange of information and strengthen coordination between MS authorities**: These topics were identified by OSPAR/Bonn Agreement and EUROSHORE representatives.

– **Case studies**: The Finnish authorities indicated that, based on their experience, the most valuable meetings are those where real experiences are shared. This could be done by presenting case studies or explaining something they have tested.

– **Monitoring reporting compliance**: OSPAR/Bonn agreement representative see the focus of the group on reporting to monitor if and why it is not done and ensure information exchanged/updated either through annual meetings or with participation of a representative of the Bonn Agreement to the SSP directive expert group meetings.

However, French authorities shared a concern that a lot of committees of expert groups already exist and that their usefulness usually depends on the scope and planning of the new group. They stated that, if the meeting is held annually, it could be an interesting opportunity to improve coordination and harmonisation between Member State authorities. One authority mentioned that Member States are already part of the ESSF and the mandate and scope of work of the new group should be carefully considered.

– Penalties

Stakeholders were asked to identify the most suitable policy measures to address Problem Driver 3. Four stakeholders[117] identified the measure of non-regulatory nature for establishing the level of penalties as the most suitable or among the most suitable measures to address PD3. Concerning the impact of this measure on the level of penalties applied, three stakeholders[118] agreed that the measure would have a significant impact. Furthermore, two MS authorities considered the measure would result in an increase in the level of the penalties applied to a moderate extent, and one MS authority to a limited extent. However, Spanish authorities consider that the ability to impose penalties is contingent on the ability to gather sufficient evidence to support the case, but the level of penalties is not likely to change as a result of this measure. Furthermore, Cypriot authorities believe that the outcome will vary case by case.

Five out of 20 stakeholders agreed with the principle regarding of serious negligence and four stakeholders[119] disagreed with this principle, as they consider that intent should always be proved. The majority of the stakeholders neither agreed nor disagreed with the proposed principle or indicated that they did not know the answer.

Seven out of 20 stakeholders[120] agreed with the principle regarding penalties being imposed on a pre-defined legal person that should indicate who the correct legal person is to assume liability for the violation. On the other hand, three maritime industry stakeholders[121] disagreed with this principle, as they consider that pre-defining a legal person to indicate responsibility is far reaching and excessive. The majority of the stakeholders neither agreed nor disagreed with the proposed principle or indicated that they did not know the answer.

[117] These include two MS authorities and two regional/international bodies.
[118] These include one MS authority, one regional/international boy and one environmental NGO.
[119] These include one MS authority and three maritime industry stakeholders.
[120] These include six MS authorities and one NGO.
[121] These include three maritime industry stakeholders.

Five out of 20 stakeholders[122] agreed with the principle regarding estimation of the level of the penalty being based on an estimate of the size and quality of the discharge. According to the Bulgarian authorities, it is considered easier to set the penalty first taking into consideration the quantity and size of the spill. However, the Cypriot authorities indicated that determining the level of the penalty based on the size of the discharge is challenging. On the other hand, one Member State authority disagreed with this principle, as they consider that this criterion can only be applied to certain substances (e.g. oil) but not to all polluting substances involved in ship-source pollution. The majority of the stakeholders neither agreed nor disagreed with the proposed principle or indicated that they did not know the answer.

Seven out of 20 stakeholders[123] agreed with the principle regarding possibility to appeal against administrative sanction in a court of law. The Bulgarian authorities and BIMCO indicated that it should always be possible for everyone to appeal against a sanction that could be unfair. However, Spanish authorities reported that the principle is already included as such in the Spanish law. Furthermore, OSPAR/Bonn Agreement representative considers that it depends on the Member States applying the penalty, and that it is also convenient to know what is done in the actual practice and what is more efficient in different Member States. IPTA considers that increasing penalties or liabilities will not decrease the level of illegal discharges.

With regards to the regulatory approach of including criteria for setting the level of administrative penalties in the Directive, there was a general agreement over harmonisation of penalties at EU level. However, specific support to this measure was only provided by four Member State authorities and four international/regional bodies[124]. In this context, Belgian and Dutch authorities regard the harmonisation of monetary penalties to be very difficult in practice because of the variety of legal frameworks. Furthermore, Belgian authorities consider existing administrative penalties are already effective and dissuasive. The Spanish authority representative believes that the size and quantity of the discharge should be the most important factors to consider. Other factors, such as the intentionality or impact of the discharge, could also be considered, but only as secondary factors influencing the monetary penalty imposed. With regards to the criteria proposed for setting monetary penalties, stakeholders consulted provided mixed views.

It is also worth mentioning that the harmonisation of penalties, as well as raising penalties to be significant were selected in the OPC as a measure to be considered for the review of the SSP Directive, where seven out of 16 of the respondents indicated that they consider this measure useful or very useful.

– Differences among stakeholder groups

The main two points of disagreement throughout the consultations were the following:

(1) Environmental NGOs advocate for increasing the scope of polluting substances to go beyond MARPOL Annexes and cover other types of polluting substances regulated under the MARPOL Convention. Whilst Member States have divergent views on this issue and the industry strongly disagrees with extending the scope

[122] These include four MS authorities and one NGO.
[123] These include five MS authorities, one industry stakeholder and one NGO.
[124] REMPEC supported this measure to be applicable only for administrative penalties.

of the Directive in principle and even more so disagrees with going beyond MARPOL.

(2) Industry advocates to align the liability threshold (i.e. remove the provision on serious negligence) and geographical scope of the Directive with MARPOL, whereas most of the remaining stakeholders disagree. Industry perceives this factor and referring to serious negligence as one limiting legal certainty. Other stakeholders (e.g. EIA intervention at stakeholder workshop) would like to see the liability threshold maintained at the same level as currently as to not make it more difficult to prosecute the offenders. No court case has been identified since 2005 where there was unfair treatment of crew members in a ship-source pollution incident.

In the context of the second point, stakeholders consulted provided mixed views on the policy measure for clarifying the exception concerning infringement for crew members, as well as conditional support in some cases (e.g., if some conditions were satisfied). Two Member State authorities and one regional/international body agreed with the measure, as they considered that the proposed additional text is similar to the principle stated by other international conventions. However, three other stakeholders (including two maritime industry stakeholders, ECSA and ICS, as well as one Member State authority) have expressed their opposition to this measure. Representatives from ECSA and ICS considered that this measure would only be a partial improvement over the current Directive and could only be supported if a similar provision was developed for ship-owners.

Also, stakeholders consulted provided limited views regarding the measure on a provision being included in the Directive on whistle-blowers, as they referred to their limited expertise on the implications of this policy measure. In this regard, one Member State authority agreed with this measure, although they pointed to the different procedures that already in place in different Member States regarding whistle-blowers and indicated that flexibility would be needed in each Member State to implement this measure accordingly. One NGO supported this measure during their intervention at the stakeholder workshop.

– Costs of the future directive

Member State authorities were asked to provide an estimate of the expected costs associated with a potential extension of the scope of the Directive. However, limited information was provided, as several authorities stated that providing this estimate is significantly challenging. Some of the authorities stated that this is because it is difficult to separate the costs as they are part of their daily job. Additional costs were cited by the Finnish authorities as a result of the need for new/improved sensors. The cost could account for several million EUR. On the other hand, German authorities suggested that in terms of costs of expanding the scope to include additional annexes to MARPOL, there are no numbers on this, but that it would not be considered significant. ECSA outlined that they have no specific information on costs, but that they believe that additional costs for the shipping industry resulting from the proposed policy measures would most likely arise through defending ships and seafarers from unwarranted criminalisation in the prosecution under the Environmental Crime Directive.

Information on costs associated with measures on EMSA highly specialised support was mainly provided by EMSA. Additionally, REMPEC provided an estimate of the cost

associated with the development and delivery of training sessions at regional and/or national level. The cost was estimated at the level of approximately USD 50,000 if organised at regional level, and USD 10,000 if done at national level.

Spanish authorities estimated 0.5 additional FTE required annually to perform tasks related to uploading data to a new dedicated EMSA platform. It was specified that most of this time would be spent gathering the information on ship-source pollution incidents. French and German authorities indicated that systems to collect this information are already in place at national level. Therefore, only links to the new platform to transfer this information would be needed. As a result, they expect minimum additional costs due to the implementation of this measure. On the other hand, the Maltese authorities expected additional costs would arise from the new dedicated EMSA platform.

Six Member State authorities interviewed (out of 12) estimated that the time needed for Member State authorities to collect and submit information about prosecution for pollution from ships and penalties imposed would be more than two days annually. In addition, two Member State authorities indicated that the expected time would be between one to two hours. The Spanish and Romanian authorities emphasised that the time would depend on the characteristics of each procedure (e.g. administrative or criminal). In that sense, the Croatian authorities also clarified that the estimation provided is only referred to administrative proceedings – and related to the time needed to upload the information once it is gathered. The most challenging and time-consuming activities would still be related to collecting and summarising the information related to the case, which are not included in the estimation of 2h.

3.4 Position papers

Seven position papers were submitted when providing feedback on the Inception Impact Assessment (IIA), mostly from NGOs (six out of seven). The majority of position papers submitted touched on the following areas of revisions: the scope of the future Directive (Annex I-V substances and Annex VI discharge water from scrubbers) (n=6), mechanisms for monitoring compliance (n=3) and one NGO commented on the importance of harmonise legislation on sea pollution at EU level.

Also, five position papers were submitted by OPC respondents. However, two of these position papers had already been received during the IIA. The other three papers were submitted by a business, academia and a local authority. Most of them touched on the extension of the scope of the Directive (Annex I-VI).

Four position papers were received by the survey respondents in the Evaluation phase (two from NGOs, one from an industry stakeholder and one from academia), although all of them were updates of those already been submitted to previous phases of the study, including the IIA and/or the OPC.