



**MEPSEAS Training Course on the Legal
Implementation of the revised MARPOL
Annex V**

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1. The Course

1.1. Purpose of the Course

This is an introductory course for personnel having different skills, knowledge and experience in legal aspects of MARPOL and in particular the revised Annex V. This course will thus provide a common set of knowledge and skills to all participants to enable them to take appropriate action in their various capacities towards the implementation of the revised Annex V into their national legislation. The participants will be able to learn from others, review and discuss jointly issues of common interest as well as acquire new skills required to encourage them to implement the revised Annex V into their national legislation.

This course has a global dimension, and it is not specific to any country in particular. It was designed to be delivered in any country, adapted to local characteristics and according to how advanced the country is on the issue. The course provides an excellent opportunity to gather stakeholders together and to establish national and regional cooperative networks.

1.2. Objectives of the Course

Provide participants with skills and knowledge necessary to implement the revised Annex V into their national legislation. This is to be achieved through developing and implementing the provisions of the revised Annex V, taking into account other legal instruments, and drafting procedures for legislation dealing with the prevention of pollution by garbage from ships.

1.3. Training Methodology

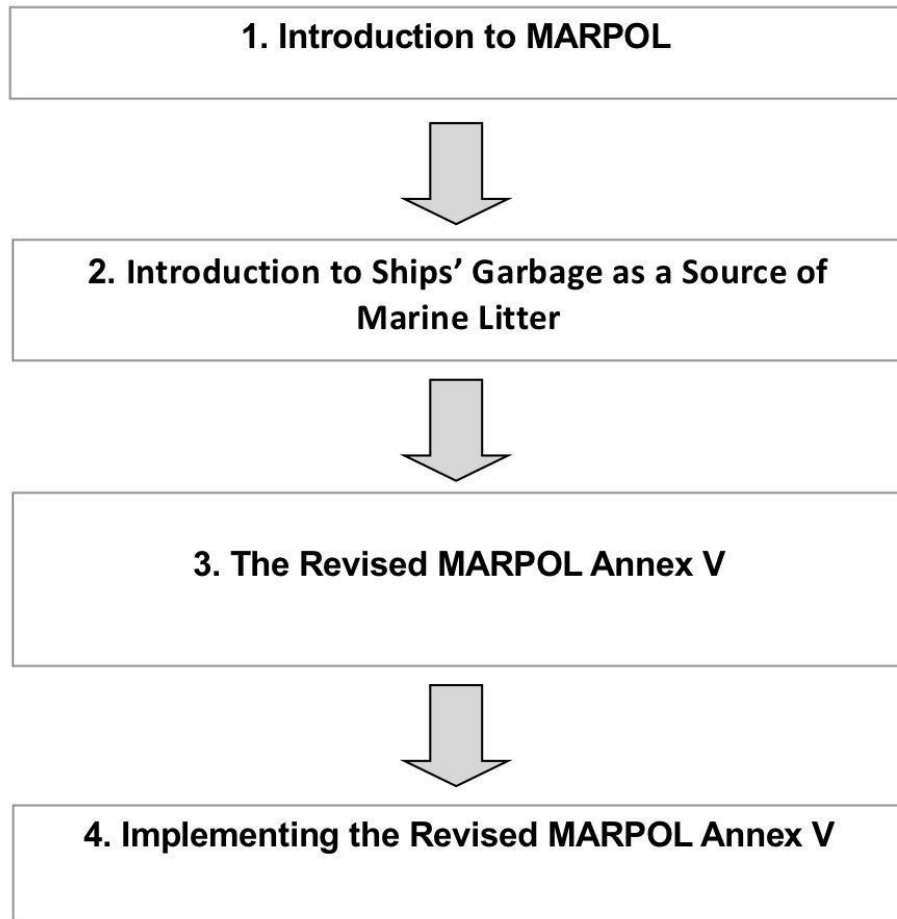
The training course is designed and developed using partially the TRAIN-X methodology. The course consists of four modules covering the following major themes:

- An introduction to MARPOL and garbage from ships as a source of litter
- The key steps towards the legal implementation of the revised Annex V
- The drafting procedures for legislation dealing with the prevention of pollution by garbage from ships.

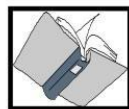
The introductory module provides the background for the subsequent modules which focus on the provisions of the revised MARPOL Annex V, associated guidelines and other international conventions, and the practical procedures to implement the revised MARPOL Annex V within the national legislation.

The flowchart below presents the logical sequence of the modules.

MEPSEAS Training Course on the Legal Implementation of the Revised MARPOL Annex V



Based on



Manual



Trainees



Instructor



Case Studies

1.4. Training Techniques used in the Course

This Training Course is not an academic course. It is a hands-on course with exercises, discussions of case studies and a number of practical activities. The instructors will present the content of the modules and guide the discussions of the most relevant issues. It is expected that the participants will contribute substantially, by sharing their knowledge and experiences.

1.5. The Structure of Participants Manual

The Participants Manual of the *MEPSEAS Training Course on the Legal Implementation of the revised Annex V* is composed of four modules and is the main source of reference for the course.

1.6. Formats used in the Text

In the Participants Manual two formats are used to indicate points that are especially important:

 **This symbol represents an important concept or situation, requiring the trainee's special attention.**

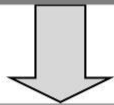
EXAMPLE

Boxes are used to highlight examples or case studies of the most significant issues that are dealt with in each module

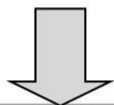
MEPSEAS Training Course on the Legal Implementation of the Revised MARPOL Annex V

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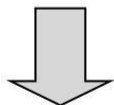
1. Introduction to MARPOL



2. Introduction to Ships' Garbage as a Source of Marine Litter



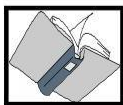
3. The Revised MARPOL Annex V



4. Implementing the Revised MARPOL Annex V

- MODULE 1: OBJECTIVES**
- Outline the issue of pollution from ships
 - Express the international response to the problem; and
 - Describe the content of MARPOL and the Annexes I, II, III, IV and VI.

Based on



Manual



Trainees



Instructor



Case Studies



Module Aims and Objectives of Module 1

This module aims to provide an overview of the impact of pollution from ships, and the international response to deal with the issue, leading up to the adoption of the International Convention on the Prevention of Pollution from Ships (MARPOL). This module also provides background information on the development of MARPOL, including its adoption, and overview of the other Annexes.

At the end of this module participants will be able to:

- Outline the issue of pollution from ships;
- Express the international response to the problem; and
- Describe the content of MARPOL and the Annexes I, II, III, IV and VI.

The Module is divided into three parts, namely:

- 1 The Issue;
- 2 The international response; and
- 3 Introduction to MARPOL and its Annexes

Table of Content Module 1

| | |
|---|-----------|
| 1. The issue: Pollution from ships | 13 |
| 2. The International Response: MARPOL | 15 |
| 2.1. The international response: MARPOL | 15 |
| 3. MARPOL and its Annexes | 16 |
| 3.1. The Annexes | 16 |
| 3.1.1. Annex I Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)..... | 17 |
| 3.1.2. Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (entered into force 2 October 1983) | 17 |
| 3.1.3. Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (entered into force 1 July 1992)..... | 17 |
| 3.1.4. Annex IV Prevention of Pollution by Sewage from Ships (entered into force 27 September 2003)..... | 17 |
| 3.1.5. Annex V Prevention of Pollution by Garbage from Ships (entered into force 31 December 1988) | 17 |
| 3.1.6. Annex VI Prevention of Air Pollution from Ships (entered into force 19 May 2005)..... | 18 |
| 3.2. Structure and components of MARPOL | 18 |
| 3.3. Definitions | 19 |
| 3.4. Rights and obligations | 20 |
| 3.5. Application | 20 |
| 3.6. Implementation of IMO instruments | 22 |
| 3.7. Issue and acceptance of certificates: | 22 |
| 3.8. Communication of information | 23 |
| 3.9. Global Integrated Shipping Information System (GISIS) | 23 |
| 3.10. Special areas | 24 |
| 3.11. Emission control areas (ECAs) | 27 |
| 4. References and Other Sources of Information | 27 |

1. The issue: Pollution from ships

Shipping – which transports 90 per cent of global trade – is, statistically, the least environmentally damaging mode of transport, when its productive value is taken into consideration. The vast quantity of grain required to make the world's daily bread, for example, could not be transported any other way than by ship. Moreover, set against land-based industry, shipping is a comparatively minor contributor, overall, to marine pollution from human activities.

Still, also shipping operations have an impact on the environment, both marine and atmospheric, through air emissions (such as sulphur and nitrogen) and carbon dioxide (CO₂). Operational wastes, ballast water (as a vector for invasive species), residues from anti-fouling systems, hazardous cargo residues and their washing waters, etc. can have a disturbing effect on the marine environment, especially in sensitive ecosystems such as the polar waters.

Although the major sources of marine pollution are on land, not afloat, oil tankers and other vessels carrying hazardous and noxious cargoes represent a form of ultra-hazardous risk for all coastal states, which is the object of international law to mitigate and control.

Pollution from ships is generally of two kinds: operational and accidental. Compared to spectacular accidental pollution, operational pollution, although less visible, poses a bigger threat to the marine environment. Oil tankers, for example, traditionally washed their oil tanks and disposed of oily residue at sea, causing significant volumes of pollution. The objective of international regulation in this context has been to eliminate the need for such discharges, through technical solutions and the provision of shore facilities. The second form of marine pollution, more dramatic but in aggregate less significant, emanates from marine casualties. The sinking of large oil tankers such as the Torrey Canyon, the Amoco Cadiz, or the Exxon Valdez exemplifies the scale and potential severity of such accidents, whose seriousness derives mainly from the volume of oil or other pollutants released in one place. Such accidents harm coastal communities, fisheries, wildlife and local ecology.

Several studies have indicated that pollution from shipping also contributes to the issue of marine litter. Marine litter can be defined in different ways, but in UNEP's 2005 "Marine Litter – An Analytical Overview" marine litter is defined as:

"Marine litter is any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment. Marine litter consists of items that have been made or used by people and deliberately discarded into the sea or rivers or on beaches; brought indirectly to the sea with rivers, sewage, storm water or winds; accidentally lost, including material lost at sea in bad weather (fishing gear, cargo); or deliberately left by people on beaches and shores."

Marine litter originates from many sources and causes a wide spectrum of environmental, economic, safety, health and cultural impacts. The very slow rate of degradation of most marine litter items, mainly plastics, together with the continuously growing quantity of the litter and debris disposed, is leading to a gradual increase in marine litter found at sea and on the shores. Also according to UNEP's 2005 overview, the main sources of marine litter can be grouped as sea-based and land-based (Table 1, Figure 1).



Figure 1: Picture: Mammal trapped in plastic wastes: Michael Pitts

Table 1: Main sources of marine litter.

| Main sea-based sources of marine litter | Main land-based sources of marine litter |
|--|--|
| Merchant shipping, ferries and cruise liners; Fishing vessels; Military fleets and research vessels; Pleasure craft; Offshore oil and gas platforms; and Aquaculture installations. | Municipal landfills (waste dumps) located on the coast; Riverine transport of waste from landfills, etc., along rivers and other inland waterways; Discharges of untreated municipal sewage and storm water (including occasional overflows); Industrial facilities (solid waste from landfills, and untreated waste water); and Tourism (recreational visitors to the coast). |

In general, the amounts of sea-based litter are not as high as land-based litter. According to data from the United States Environmental Protection Agency, land-based sources cause 80% of the marine debris found on US beaches and waters (Source: water.EPA.gov). However, the impact of sea-based sources may be underestimated due to lack of data. Also, the contribution from sea-based versus land-based sources varies largely between areas, and in some areas sea-based sources (especially from fishing activities) dominate (Unger A., Harrison N., 2016).

2. The International Response: MARPOL

As a specialized agency of the United Nations, the International Maritime Organization (IMO) is empowered to promote the general adoption of the highest practicable standards in matters concerning the maritime safety, efficiency of navigation and prevention and control of marine pollution from ships. In this standard-setting role IMO has developed and adopted more than 50 international conventions as well as a large number of codes, recommendations and guidelines. Responsibility for regulatory developments is divided between a Maritime Safety Committee (MSC), a Marine Environment Protection Committee (MEPC) and a Legal Committee. MEPC is IMO's senior technical body on marine pollution related matters. It is aided in its work by a number of IMO's Sub-Committees.

2.1. The international response: MARPOL

One of the earliest indications of marine pollution as a problem requiring international control was pollution of the sea by oil. In 1954, the International Convention for the Prevention of Pollution of the Sea by Oil was adopted, which marked the first successful attempt at international regulation of oil pollution from tankers. It was successively amended until its replacement in 1973 by the MARPOL Convention.

Despite the action already taken by IMO to deal with oil pollution, far-reaching developments in modern industrial practices soon made it clear that further action, was required. In particular, the Torrey Canyon accident in 1967 prompted a new discussion on ship safety and the protection of the marine environment leading to a decision to develop a comprehensive instrument regarding pollution prevention from ships. Accordingly, the IMO Assembly decided in 1969 to convene an international conference to prepare a suitable international agreement for placing restraints on the contamination of the sea, land and air by ships.

☞ **The International Convention for the Prevention of Pollution from Ships was adopted in November 1973, referred as MARPOL 73.**

With a view to further improving the prevention and control of marine pollution from ships, particularly oil tankers, and to allowing Contracting States to defer implementation of Annex II until certain technical problems have been satisfactorily resolved, a Protocol to MARPOL 73 was agreed by the International Conference on Tanker Safety and Pollution Prevention (TSPP) in February 1978. At the time of the TSPP Conference, MARPOL 73 had not yet entered into force and could therefore not be amended. To keep it as one Convention it was decided that this Protocol should embrace MARPOL 73.

☞ **The Convention, as modified by the Protocol of 1978 to facilitate entry into force, was known as MARPOL 73/78.**

The concern over air pollution was triggered by a growing general awareness that the marine industry should not remain outside the growing worldwide trend to control air pollution sources. Such concerns resulted in the development of Annex VI, covering a range of air pollutants, which was adopted at a diplomatic conference by means of the 1997 Protocol to the Convention. It was duly noted that, after the adoption of the 1997 Protocol, it was decided not to add "97" to MARPOL 73/78 but to refer to the Convention just as MARPOL, without any reference to a year.

The regulatory measures adopted by IMO have shown to be successful in reducing vessel-sourced pollution, e.g. when looking at the number of oil spills (**Figure 2**)

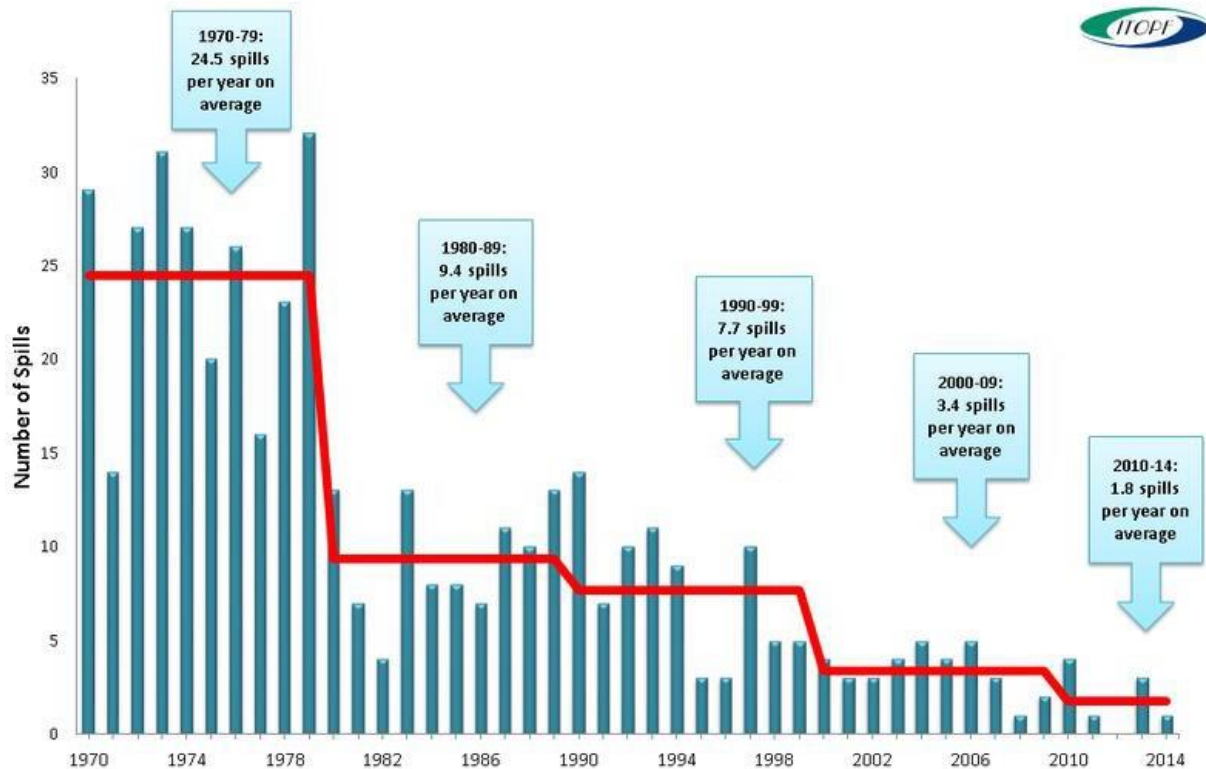


Figure 2: Number of large oil spills (> 700 tonnes) from 1970 to 2014 (source: ITOPF statistics).

3. MARPOL and its Annexes

3.1. The Annexes

MARPOL, together with six annexes covering pollution by oil, chemicals, harmful substances in packaged form, sewage, garbage and airborne emission, works as a whole and have proved effective for the prevention of pollution by ships.

3.1.1. Annex I Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)

Covers prevention of pollution by oil from operational measures as well as from accidental discharges; the 1992 amendments to Annex I made it mandatory for new oil tankers to have double hulls and brought in a phase-in schedule for existing tankers to fit double hulls, which was subsequently revised in 2001 and 2003.

3.1.2. Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (entered into force 2 October 1983)

Details the discharge criteria and measures for the control of pollution by noxious liquid substances carried in bulk; some 250 substances were evaluated and included in the list appended to the Convention; the discharge of their residues is allowed only to reception facilities until certain concentrations and conditions (which vary with the category of substances) are complied with.

In any case, no discharge of residues containing noxious substances is permitted within 12 miles of the nearest land.

3.1.3. Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (entered into force 1 July 1992)

Contains general requirements for the issuing of detailed standards on packing, marking, labelling, documentation, stowage, quantity limitations, exceptions and notifications.

For the purpose of this Annex, "harmful substances" are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code) or which meet the criteria in the Appendix of Annex III.

3.1.4. Annex IV Prevention of Pollution by Sewage from Ships (entered into force 27 September 2003)

Contains requirements to control pollution of the sea by sewage; the discharge of sewage into the sea is prohibited, except when the ship has in operation an approved sewage treatment plant or when the ship is discharging comminuted and disinfected sewage using an approved system at a distance of more than three nautical miles from the nearest land; sewage which is not comminuted or disinfected has to be discharged at a distance of more than 12 nautical miles from the nearest land.

3.1.5. Annex V Prevention of Pollution by Garbage from Ships (entered into force 31 December 1988)

Deals with different types of garbage and specifies the distances from land and the manner in which they may be disposed of; the most important feature of the Annex is the complete ban imposed on the disposal into the sea of all forms of plastics.

3.1.6. Annex VI Prevention of Air Pollution from Ships (entered into force 19 May 2005)

Sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances; designated emission control areas set more stringent standards for SO_x, NO_x and particulate matter. A chapter adopted in 2011 covers mandatory technical and operational energy efficiency measures aimed at reducing greenhouse gas emissions from ships.

The Convention articles mainly deal with jurisdiction, powers of enforcement and inspection; more detailed anti-pollution regulations are contained in annexes, which can be adopted and amended by MEPC, subject to acceptance by at least two-thirds of Parties constituting not less than 50 per cent of the gross tonnage of the world merchant fleet.

 **All Parties are bound by Annexes I and II, which means States ratifying or acceding to MARPOL must give effect to the provisions of these two annexes.**

Other annexes are optional, and States could decide by themselves whether or when to accede or ratify these annexes. The status of ratification of MARPOL and its Annexes is presented in Table 2.

Table 2: Status of MARPOL as of 14 May 2018.

| MARPOL | Entry into force | No. of Parties | % world GT |
|--------------------------|-------------------|----------------|------------|
| Annexes I & II | 2 October 1983 | 156 | 99.42 |
| Annex III | 1 July 1992 | 148 | 98.81 |
| Annex IV | 27 September 2003 | 142 | 96.54 |
| Annex V | 31 December 1988 | 153 | 98.97 |
| Annex VI (Protocol 1997) | 19 May 2005 | 91 | 96.89 |

3.2. Structure and components of MARPOL

The MARPOL Convention includes regulations aimed at preventing and minimizing pollution from ships, both accidental and operational pollution.

- MARPOL is a text composed of various documents, but it is to be considered as one legal juridical instrument.

Currently MARPOL consists of:

- The International Convention of the Prevention of Pollution from Ships, 1973;

- Protocol of 1978 relating to the International Convention of the Prevention of Pollution from Ships, 1973;
- Protocol I: Provisions concerning Reports on Incidents Involving Harmful Substances;
- Protocol II: Arbitration;
- Annex I: Regulations for the prevention of pollution by oil;
- Annex II: Regulations for the control of pollution by noxious liquid substances in bulk;
- Annex III: Regulations for the prevention of pollution by harmful substances carried by sea in packaged form;
- Annex IV: Regulations for the prevention of pollution by sewage from ships;
- Annex V: Regulations for the prevention of pollution by garbage; and
- Protocol of 1997, Annex VI: Regulations for the prevention of air pollution from ships.

3.3. Definitions

Certain definitions found in MARPOL (Art 2) that is worth highlighting:

“Ship” means a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms.

“Administration” means the Government of the State under whose authority the ship is operating. With respect to a ship entitled to fly a flag of any State, the Administration is the Government of that State. With respect to fixed or floating platforms engaged in exploration and exploitation of the sea-bed and subsoil thereof adjacent to the coast over which the coastal State exercises sovereign rights for the purposes of exploration and exploitation of their natural resources, the Administration is the Government of the coastal State concerned.

“Harmful substance” means any substance which, if introduced into the sea, is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea, and includes any substance subject to control by the present Convention.

“Discharge, in relation to harmful substances or effluents containing such substances” means any release howsoever caused from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying.

Discharge does not include:

- dumping within the meaning of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, done at London on 13 November 1972; or
- release of harmful substances directly arising from the exploration, exploitation and associated offshore processing of sea-bed mineral resources; or
- release of harmful substances for purposes of legitimate scientific research into pollution abatement or control.

3.4. Rights and obligations

Many of the articles of MARPOL set down definite requirements which form the basis towards the regulations of the Annexes and might require specific actions by the Parties.


Parties that ratify MARPOL undertake to give effect to its provisions, including those Annexes to which they are bound (being the compulsory Annexes I and II) and any of the optional Annexes they have accepted, in order to prevent the pollution of the marine environment by the discharge of harmful substances or effluents containing such substances in contravention of the Convention.

It should be noted that whereas Parties to MARPOL have obligations, they also have rights and privileges. Parties accept the obligation not to discharge residues into the sea or to control the discharges of pollutants to the atmosphere, in return for which they have the privilege of not being polluted by other Parties (if they are polluted by a non-Party ship, and the pollution occurs within their territorial waters or Exclusive Economic Zone (EEZ), they can prosecute). A non-Party does not accept the obligations to place restrictions upon its ships and, therefore, its ships cannot be prosecuted for failing to comply (except in the territorial waters or EEZ of a Party if apprehended, as the Convention contains the so-called “no more favourable treatment” clause). It has to accept, however, that failure to accept such obligations means that when its own shoreline is polluted, or air quality affected it does not have the privilege under MARPOL to insist upon the prosecution of the ship concerned. In addition, article 5(4) of the Convention provides that no more favourable treatment is to be given to the ship of non-Parties.

3.5. Application

MARPOL applies to (Figure 3):

- ships entitled to fly the flag of a Party to the Convention; and
- ships not entitled to fly the flag of a Party but which operates under the authority of a Party.

 **It can be noted that MARPOL applies to all ships flying the flag of a Party, not limited to those engaged on international voyages; and by Gross Tonnage (all sizes).**

MARPOL does not apply to (Figure 4) .

- any warship, naval auxiliary or other ship owned or operated by a State and used, for the time being, only on government non-commercial service.

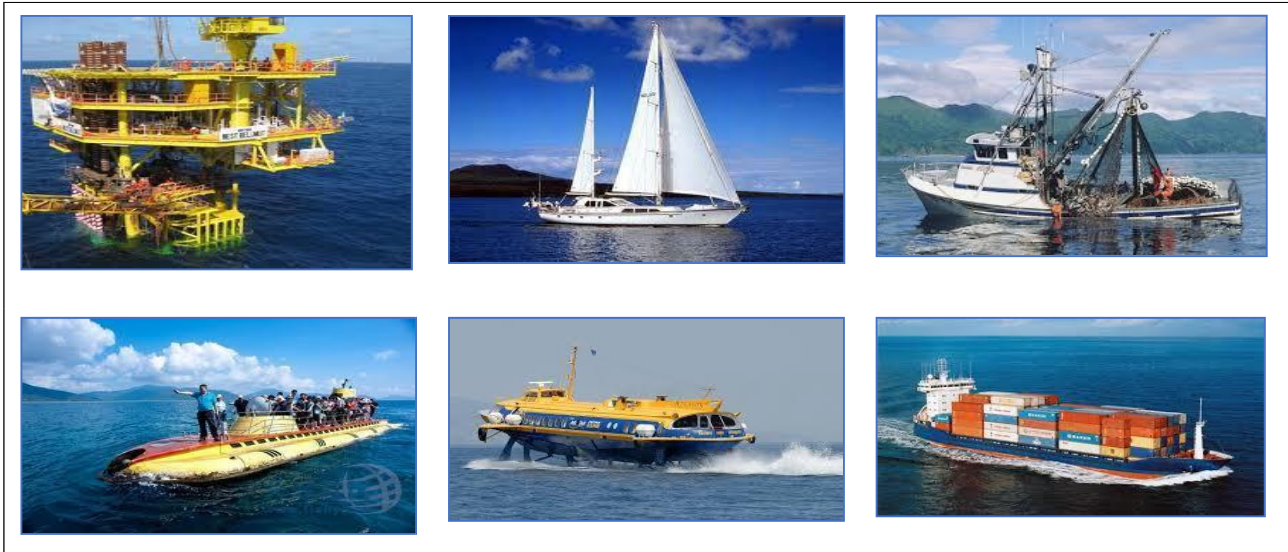


Figure 3: Examples of ships to which the Annex V applies



Figure 4: Examples of Ships to which the Annex V does not apply

However, each Party shall ensure by the adoption of “appropriate measures” not impairing the operations or operational capabilities of such ships owned or operated by it, that such ships act in a manner consistent, as far as is reasonable and practicable with the present Convention (article 3).

MARPOL contains no exclusion for fishing vessels and pleasure crafts. The national flag State administration (further named “Administration”) also shall establish appropriate measures for ships that are not subject to the provisions concerning surveys, in order to ensure that the applicable provisions are complied with.

3.6. Implementation of IMO instruments:

In order to ensure that the measures to protect the marine environment adopted through the international regulatory framework, such as MARPOL, are given full and complete effect, States are responsible for promulgating laws and regulations and for taking all other steps which may be necessary. It is important that these laws and regulations are fully implemented and enforced by the States, and that they have in place an adequate and effective system to exercise control.

Therefore, the IMO in 2013 adopted the “IMO Instruments Implementation Code (III Code)”. The main objective of this III Code is to enhance global maritime safety and protection of the marine environment and assist States in the implementation of IMO instruments to which these States are a Contracting Government or Party. The III Code provides policy tools for a State to:

- develop a strategy to ensure that its international obligations and responsibilities as a flag, port and coastal State are met;
- establish methodologies for monitoring and assessment in order to ensure effective implementation and enforcement; and
- review its strategy, in order to achieve, maintain and improve its overall organizational performance as flag, port and coastal State.

The IMO has also adopted amendments (Resolutions MEPC.246(66) and MEPC.247(66)) to the MARPOL Annexes I, II, II, IV, V and VI in order to make the use of the III Code mandatory. The amendments related to MARPOL Annex V will be addressed more in detail in Module 2 of this training package.

3.7. Issue and acceptance of certificates:

One of the key elements applied in the maritime industry and MARPOL is the system where certificates are issued by independent recognized organizations recognized (RO) by the Administration. Also, other Parties should accept a certificate issued under the authority of a Party to MARPOL. A ship that is required to hold a certificate under MARPOL is subject to inspection by officers of a port State that is a Party to MARPOL while in the ports or offshore terminals under its jurisdiction.

This inspection should be limited to verifying that there is a valid certificate on board, unless there are clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of that certificate. In that case, or if the ship does not carry a valid certificate, the Party carrying out the inspection shall take such steps to ensure that the ship shall not sail until it can proceed to sea without presenting an unreasonable threat of harm to the marine environment. With respect to the ship of non-Parties to the Convention, Parties shall apply all the requirements of the present Convention that may be necessary to ensure that no favourable treatment is given to such ships.

3.8. Communication of information:

The Parties to MARPOL are also bound by the requirement to communicate to IMO the following information:

- the texts of laws, orders, decrees and regulations and other instruments which have been published on matters within the scope of MARPOL;
- a list of nominated surveyors or recognized organizations which are authorized to act on their behalf in the Administration of matters relating to the design, construction, equipment and operation of ships carrying harmful substances in accordance with the provisions of the regulations, for circulation to the Parties for the information of their officers. The Administration shall therefore notify IMO of the specific responsibilities and conditions of the authority that is delegated to nominated surveyors or recognized organizations (this information was amended by article III of the 1978 Protocol);
- a sufficient number of specimens of their certificates issued under the provisions of the regulations;
- a list of reception facilities, including their location, capacity and available facilities and other characteristics;
- official reports or summaries of official reports in so far as they show the results of the application of MARPOL; and
- an annual statistical report, in a form standardized by IMO, of penalties that have actually been imposed for infringement of MARPOL.

3.9. Global Integrated Shipping Information System (GISIS)

In order to facilitate the dissemination of information and promote public access to sets of data collection by the IMO Secretariat, the IMO has developed an internet based database on information for shipping: the Global Integrated Shipping Information System (GISIS) <http://gisis.imo.org/Public/>. This GISIS-database contains both information open to the general public and a member's area section with more specific information only accessible to registered IMO users.

The management of the rights to access and use of the GISIS electronic reporting facilities is left to the discretion of Member States. For detailed information, reference is made to Circular letter No. 2639 of 8 July 2005. This undertaking requires a marine administration capable of producing the required documents.

Some of the information that can be consulted by the general public is about e.g. ships' particulars, Recognized Organizations (RO's), available Port Reception Facilities in ports worldwide, pollution prevention equipment, reported incidents of piracy and armed robbery, notifications communicated under the provisions of MARPOL Annex VI (prevention of air pollution), information on local regulations, etc.

The Members Area section contains information regarding e.g. the status and completeness of information in GISIS received from IMO-members (reporting requirements), electronic database for the implementation of the Condition Assessment Scheme (according to Resolution MEPC.94(46)), information for Port State Control, status of ratification of IMO conventions (incl. global tonnage figures), etc.

☞ The Port Reception Facility Database (PRFD) went live to the public on 1 March 2006. The database provides data on facilities for the reception of all categories of ship-generated waste (incl. MARPOL Annex V). While the public is allowed free access (following a simple initial registration) to all the information on a view-only basis, only the respective Member States can update data for reception facilities via a login password. The database aims at improving the rate of reporting alleged inadequacies of reception facilities so that the problem can be tackled more effectively.

3.10. Special areas

Due to specific oceanographic, ecological and traffic characteristics of some sea areas, MARPOL defines certain sea areas as “special areas”, in which the adoption of special mandatory methods for the protection of sea pollution is required. Under the Convention, these special areas are provided with a higher level of protection than other areas of the sea (Table 3).

The discharge of oil or oily mixture, noxious liquid substances carried in bulk, sewage and garbage (Annexes I, II, IV and V of the Convention) is subject to control in special areas. Precise details are contained in the Convention. In designing enforcement strategies for the Convention, States should take into consideration the relative importance of compliance in these special areas. The special area requirements will only take effect upon receipt of sufficient notification on the existence of adequate reception facilities from all Parties whose coastlines border the relevant special area. For the latest status of the special areas, it is advised to consult the IMO website (www.imo.org).

Table 3: Special areas/emission control areas established under MARPOL

| Special Areas | Amendments adopted to the MARPOL Annex | Entry into force of the amendments | More stringent measures in effect from |
|--------------------------------|--|------------------------------------|--|
| MARPOL Annex I: Oil | | | |
| Mediterranean Sea ¹ | - | - | 2 Oct 1983 |
| Baltic Sea ¹ | - | - | 2 Oct 1983 |
| Black Sea ¹ | - | - | 2 Oct 1983 |
| Red Sea ¹ | - | - | - |
| Gulfs area ¹ | - | | 1 Aug 2008 (Resolution MEPC.168(56)) |
| Gulf of Aden ² | 1 Dec 1987 (Resolution MEPC.29(25)) | 1 Apr 1989 | - |

| | | | |
|--|---|-------------|---|
| Antarctic Area | 16 Nov 1990 (Resolution MEPC.42(30)) | 17 Mar 1992 | 17 Mar 1992 |
| North West European waters | 25 Sept 1997 (Resolution MEPC.75(40)) | 1 Feb 1999 | 1 Aug 1999 (Resolution MEPC.77(41)) |
| Oman area of the Arabian Sea ² | 15 Oct 2004 (Resolution MEPC.117(52)) | 1 Jan 2007 | - |
| Southern South African waters | 13 Oct 2006 (Resolution MEPC.154(55)) | 1 Mar 2008 | 1 Aug 2008 (Resolution MEPC.167(56)) |
| MARPOL Annex II: Noxious Liquid Substances | | | |
| Antarctic area | 30 Oct 1992 (Resolution MEPC.57(33)) | 1 July 1994 | 1 July 1994 |
| MARPOL Annex IV: Sewage | | | |
| Baltic Sea | 15 July 2011 (Resolution MEPC.200(62)) | 1 Jan 2013 | 1 Jun 2019 1 Jun 2021 1 Jun 2023 (MEPC.275(69)) ³ |
| MARPOL Annex V: Garbage | | | |
| Mediterranean Sea | - | | 1 May 2009 (Resolution MEPC.172(57)) |
| Baltic Sea | - | | 1 Oct 1989 (Resolution MEPC.31(26)) |
| Black Sea ² | - | | - |
| Red Sea ² | - | | - |
| Gulfs area | - | | 1 Aug 2008 (Resolution MEPC.168(56)) |
| North Sea | 17 Oct 1989 (Resolution | 18 Feb 1991 | 18 Feb 1991 (Resolution |

| | | | |
|---|---|-------------|--------------------------------------|
| | MEPC.36(28)) | | MEPC.37(28)) |
| Antarctic area | 16 Nov 1990 (Resolution MEPC.42(30)) | 17 Mar 1992 | 17 Mar 1992 |
| Wider Caribbean region including the Gulf of Mexico and the Caribbean Sea | 4 July 1991 (Resolution MEPC.48(31)) | 4 Apr 1993 | 1 May 2011 (Resolution MEPC.191(60)) |
| MARPOL Annex VI: Air pollution (Emission Control Areas) | | | |
| Baltic Sea (SOx) ⁴ | - | - | 19 May 2006 |
| North Sea (SOx) | 22 July 2005 (Resolution MEPC.132(53)) | 22 Nov 2006 | 22 Nov 2007 |
| North America (SOx, NOx and PM) | 26 Mar 2010 (Resolution MEPC.190(60)) | 1 Aug 2011 | 1 Aug 2012 |
| United States Caribbean Sea (SOx, NOx and PM) | 15 July 2011 (Resolution MEPC.202(62)) | 1 Jan 2013 | 1 Jan 2014 |

1 Mediterranean Sea, Baltic Sea, Black Sea, Red Sea and the Gulfs area were designated as Special Areas under MARPOL Annexes I and V when the 1973 MARPOL Convention was adopted on 2 November 1973. MARPOL Annexes I and V entered into force on 2 October 1983 and 31 December 1988, respectively.

2 The Special Area requirements for these areas have not taken effect because of lack of notifications from MARPOL Parties whose coastlines border the relevant Special Areas on the existence of adequate reception facilities (regulation 38.6 of MARPOL Annex I and 5(4) of MARPOL Annex V).

3 In accordance with resolution MEPC.275(69), the discharge requirements for Special Areas in regulation 11.3 of MARPOL Annex IV for the Baltic Sea Special Area shall take effect:

- .1 on 1 June 2019, for new passenger ships;
- .2 on 1 June 2021, for existing passenger ships other than those specified in .3; and
- .3 on 1 June 2023, for existing passenger ships en route directly to or from a port located outside the special area and to or from a port located east of longitude 28°10' E within the special area that do not make any other port calls within the special area.

4 The Baltic Sea was designated as an Emission Control Area for SOx when MARPOL Annex VI, which entered into force on 19 May 2005, was first adopted on 26 September 1997.

3.11. Emission control areas (ECAs)

In a similar manner to the “special areas”, in accordance with Annex VI, appendix III, certain areas have been designated “emission control areas” (ECAs). These are areas where it has been demonstrated that emissions to the atmosphere from international shipping have a particularly adverse effect in adjacent land areas on either public health or the wider environment. In an ECA, lower limits are applied to nitrogen oxide (NO_x) emissions or sulphur oxide (SO_x) and particulate matter (PM) emissions or all three types of emissions.

As from December 2014 the established ECAs are:

For NO_x control (Tier III – generally applicable to ships constructed on or after 1 January 2016 operating in a designated ECA):

- North American area – this covers up to 200 miles from the coastlines of much of the USA (including Hawaii) and Canada together with the territorial waters of Saint-Pierre-et-Miquelon;
- United States Caribbean Sea area.
- For SO_x and particulate matter control:
 - Baltic Sea area;
 - North Sea area;
 - North American area – as above (with an entry into force date of 1 August 2011);
 - United States Caribbean Sea area (with an entry into force date of 1 January 2013).

Additional emission control areas for NO_x (NECA) or for SO_x (SECA) or for both NO_x and SO_x (ECA) may be established over time and hence the relevant IMO documentation should be referred to for the current status and extent of these areas.

4. References and Other Sources of Information

International Maritime Organization (IMO) website. Available at www.imo.org

Information about IMO conventions and adoption processes, including a list of conventions, their status and action dates: <http://www.imo.org/About/Conventions/Pages/Home.aspx>

Global Information Shipping Information System (GISIS) website. Available at <https://gisis.imo.org/Public/Default.aspx>

Overview of MARPOL Special Areas:

<http://www.imo.org/OurWork/Environment/PollutionPrevention/SpecialAreasUnderMARPOL/Pages/Default.aspx>

The role of the European Maritime Safety Agency (EMSA) regarding the prevention and reduction of pollution from shipping: <http://www.emsa.europa.eu/implementation-tasks/environment.html>

Birnie, P. W., & Boyle, A.E. (2002). *International Law & the Environment*, Oxford: Oxford University Press.

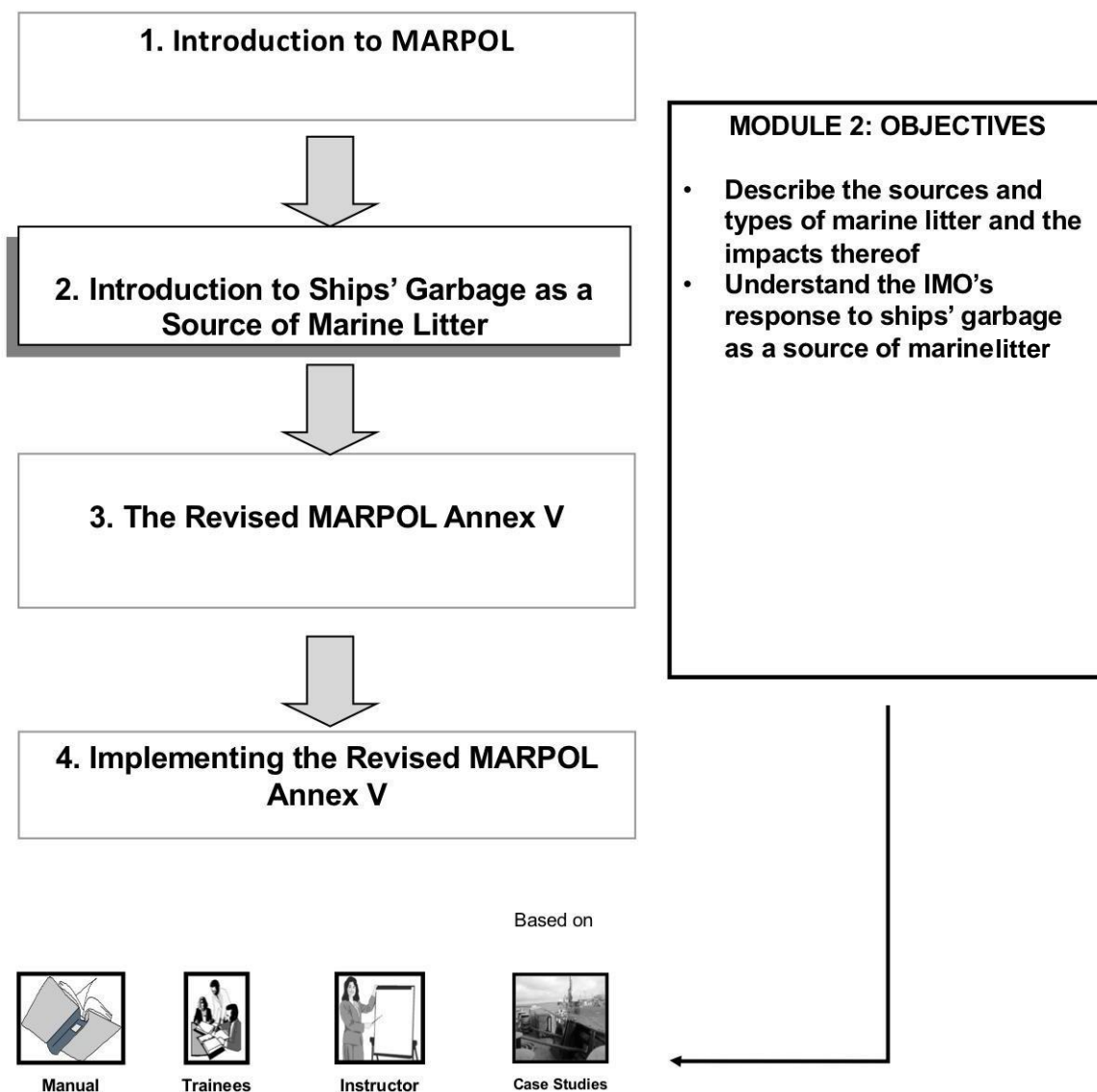
Henrik Ringbom, "Preventing Pollution from Ships – Reflections on the "Adequacy" of Existing Rules", in *Review of European Community and International Environmental Law*, No 1/1999.

Manual "MARPOL How to do it" 2013 Edition, IMO Publication ISBN 978-92-801-1521-5.

Unger A., Harrison N., 2016, "Fisheries as a source of marine debris on beaches in the United Kingdom", *Marine Pollution Bulletin*

MEPSEAS Training Course on the Legal Implementation of the Revised MARPOL Annex V

2



Module Aims & Objectives of Module 2

This module aims to provide a specific overview of ship's garbage as a source of marine litter, and the impact of marine litter on the environment. At the end of this module participants will be able to:

- Describe the sources and types of marine litter and the impacts thereof
- Understand the IMO's response to ships' garbage as a source of marine

The module is divided into two main parts, namely:

1. Definition and extent of marine litter
2. Ships' garbage as a source of marine litter

Table of Content Module 2

1. Definition and extent of marine litter..... 33

1.1. Sources and types of marine litter 33

1.2. Impacts of marine litter 37

1.3. Ships' garbage as a source of marine litter 39

2. References and Other Sources of Information..... 40

1. Definition and extent of marine litter

Marine litter is of increasing global concern.

☞ **Marine litter is defined as “any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine or coastal environment” (Galgani et al, 2010).**

Determining how much marine litter is in the oceans is challenging, given the variety of routes through which it enters the environment, and the degradation processes that occur. Nevertheless, the amount of litter in the marine environment is recognised to be significant and growing (European Commission, 2013a; UNEP, 2009; United Nations General Assembly, 2012).

As marine litter can originate from numerous sources, measures to reduce litter pollution need to target these different origins. In addition, due to the transboundary nature of the marine litter problem, it is necessary to regulate at a supranational level.

Although there are various types of marine litter, plastics (synthetic organic polymers) make up the majority of debris worldwide and in European seas (approximately 60 to 80 per cent (Derraik, 2002)). This issue is of concern as marine litter is widely recognised to result in negative ecological, social and economic impacts, such as the entanglement of protected marine species or losses in tourism revenue due to litter on beaches.

1.1. Sources and types of marine litter

Litter enters the marine environment through various means and from numerous different origins, including land-based and sea-based sources.

The main **land-based sources** of marine litter include:

- municipal landfills;
- riverine transport of waste from landfills and urban areas or other sources along rivers and other waterways;
- discharge of untreated municipal sewage;
- industrial facilities; and
- tourism, particularly recreational visitors to the coast/beach (UNEP, 2009).

Marine debris comes from many different sources and enters the ocean in many ways. Intentional littering and dumping are a big cause of marine debris. Sometimes the trash goes directly into the ocean, like when beachgoers don't pick up after themselves. Or sometimes, marine debris is indirectly generated in a city hundreds of miles from the ocean. When someone litters on the street or parking lot, rainwater can move the trash into storm drains that empty into streams, rivers, and other bodies of water. Or, the wind can blow it there. Those rivers and streams can eventually carry the trash to the ocean.

Improper or careless waste disposal is another big cause. Around the world, many people don't have access to proper waste disposal or recycling – but the trash keeps piling up, and it has to go somewhere.


Marine debris comes from activities out on the water, too. People on boats sometimes throw their trash overboard, and that's against the law. Or, trash can accidentally fall, blow, or wash off of vessels into the water. Sometimes fishers lose their fishing gear thanks to storms or passing vessels. Once the debris gets to the ocean, it is very difficult to trace the exact source.

The bottom line is, marine debris comes from us. Humans are the source, and every single person has the power – and the responsibility – to prevent it.

It is frequently cited that globally 80 per cent of marine debris originates from land-based sources, and 20 per cent from ocean-based sources, however the origins of this ratio are unclear (NOAA, 2009). Besides, the importance of these sources in terms of their contribution to the marine litter problem varies significantly regionally and locally depending on the scale of these activities in the area, as well as the policies regulating them. This means that there is significant variation in the amounts and types of debris arising from these sources regionally and locally, and indeed, seasonally (Unger A., Harrison N., 2016).

EXAMPLE

❖ **Tourism**



Tourism related litter (e.g. food wrappers, cigarette butts, etc) is most likely to make up a greater proportion of marine debris in popular tourist beaches, particularly during the tourist season.

Photo:
<https://globalnews.ca/news/4418956/cigarette-butts-ocean-pollution-ban/>

Another important factor affecting the distribution of litter are ocean currents which may concentrate litter in certain places. For example, the Bohus Coast in the northern parts of the Swedish west coast is heavily affected by marine litter because it is where several currents from the North and Baltic seas converge (Kinell et al, 2012) (Figure 5).

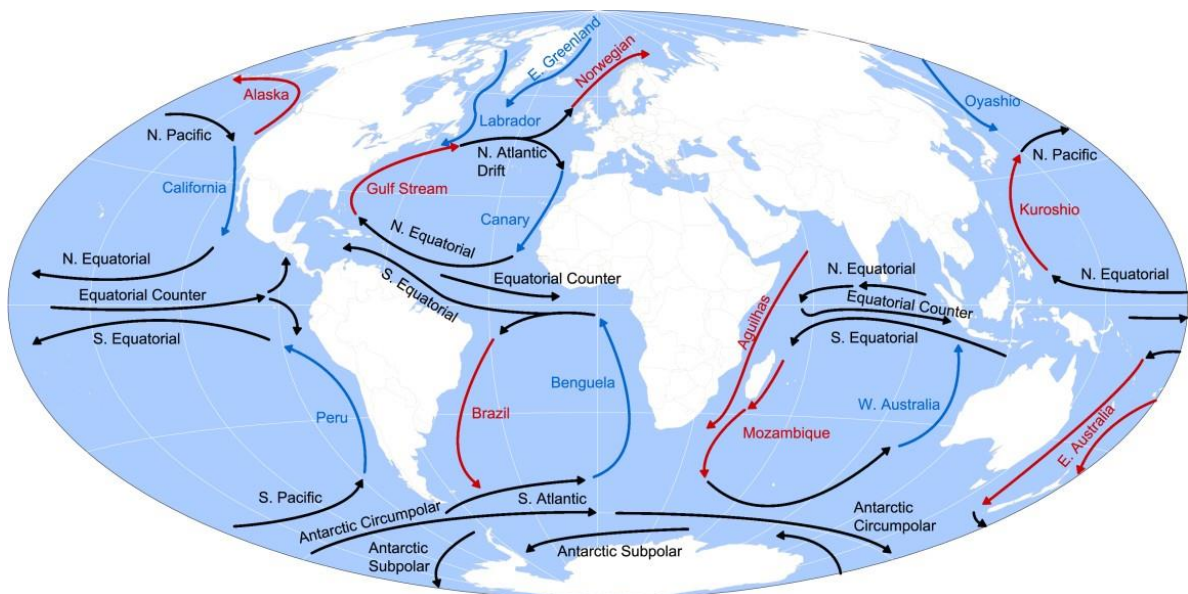


Figure 5: World ocean currents system (source: <http://www.freeworldmaps.net>)

In the North-East Atlantic, the items most commonly found on beaches are ropes, nets and cords; and packaging materials and small (<50 cm) pieces of plastic, including plastic bottles and bottle caps (Interwies et al, 2013) (Figure 6 and Figure 7).

☞ **The prevalence of these items suggests that maritime activities (eg fishing vessels, merchant shipping, pleasure craft, etc) and coastal recreation and tourism activities are the predominant sources of marine litter in the sea basin (accounting for approximately 30-40 per cent of marine litter items found each) (Interwies et al, 2013).**

In addition, research from the University of Plymouth has shown that plastic debris is fragmenting in the environment and that microscopic pieces of common polymers (microplastics) including polyethylene, polyvinyl chloride and polypropylene are now present on shorelines and in the water column of the North East Atlantic (Thompson et al, 2004; Thompson et al, 2009).

The world manufactures over 300 million tonnes of plastic a year – that is equivalent to the weight of the entire adult population of the planet. Half of that we use just one, sometimes only for a few seconds, and then we throw it away. And while plastic is an amazingly versatile and useful product, it is virtually indestructible, and production has outpaced the planet's ability to deal with the waste we are producing. Landfill is not the answer and there are just not enough recycling facilities around to deal with it. Poor waste management coupled with human neglect has resulted in plastic pollution covering our planet like a disease. Inevitably it is ending up in our lakes, rivers and oceans. Scientific evidence has shown that around 8 to 12 million tonnes of plastic ends up in our oceans every year.

However, the problem is far worse. As it journeys on ocean currents for many years the plastic breaks down due to the action of the sun and waves into tiny particles called microplastics. Unfortunately, these attract toxins, toxins that can cause all manner of diseases in humans. These toxins have found their way into the oceans over many years from industrial and agricultural sources. Fortunately, until now, the ocean has taken care of us, diluting them to concentrations that reduce the harm they can cause. The toxins are hydrophobic and float in the surface layer of the ocean. When they come into contact with any of the billions of plastic microparticles they are adsorbed by the plastic. These plastic particles are being ingested by marine animals and as they do so these toxins are being passed up the food chain, becoming more concentrated as they do, almost like miniature toxic time bombs. Ultimately, we are at the top of that food chain and the outcome could be potentially catastrophic. (<https://plasticoceans.uk/the-facts/>).

According to a 2017 report by Ocean Conservancy, five countries in Asia are dumping more plastic into oceans than the rest of the world combined.

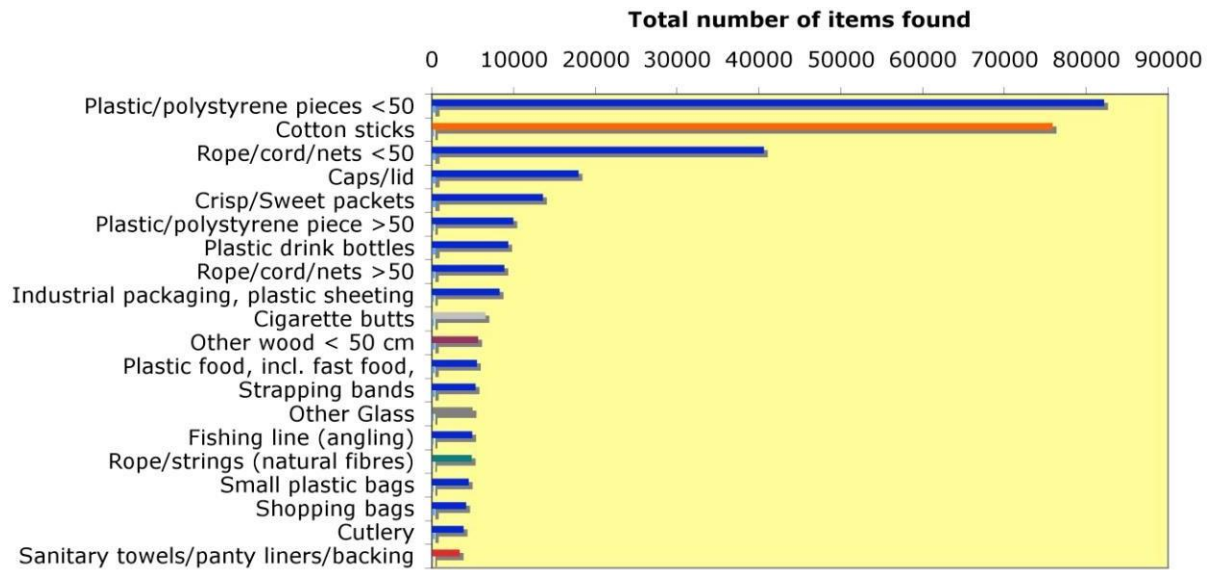


Figure 6: Total numbers of most common items found on OSPAR reference beaches (source: OSPAR).

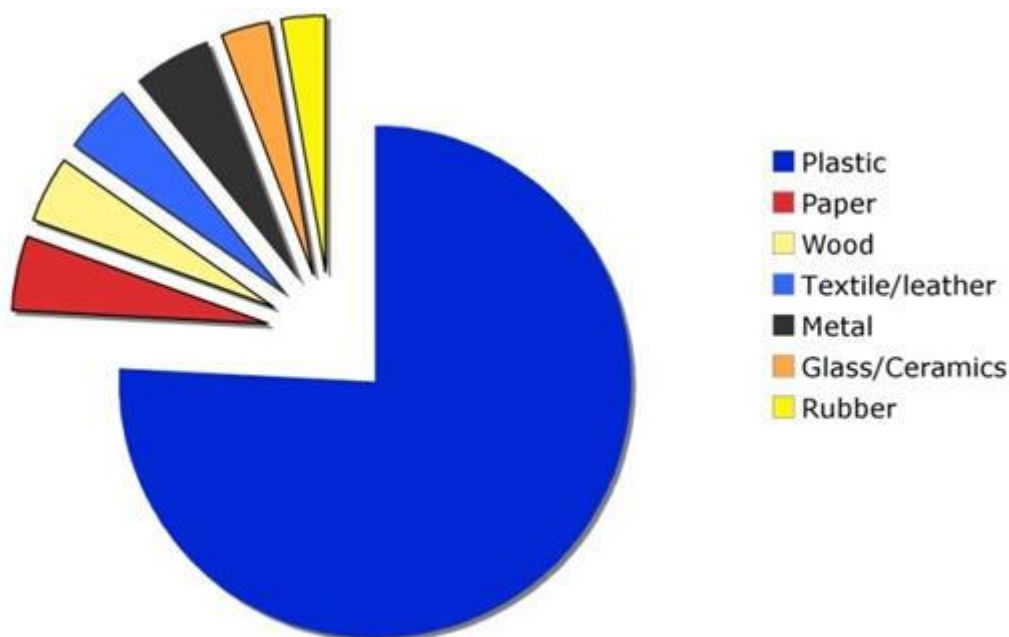


Figure 7: Proportion of different materials found on Southern North Sea reference beaches

Data on the amounts and origins of marine litter in the Black Sea are very limited and local. Nevertheless, the three reports which refer to the main items found in the Black Sea region are coherent, with disposable packaging and single use plastic goods making up the majority (i.e. bottles, bags, crisp/sweet packets, cans, and bottle caps). According to Topçu et al (2013) municipal waste/sewage and badly managed landfills are the most important sources, followed by marine transport and ports. In contrast, Arcadis (2012) concluded that recreational tourism activities represent the most important source.

In the Baltic Sea the most commonly found items of marine litter are plastics generally (50-60 per cent of items), and more specifically, plastic bottles, cigarette butts, cotton bud sticks, and food and snack packaging. Fishing nets and micro particles are also assumed to be important (HELCOM, 2013 in Interwies et al, 2013). This suggests that land-based sources are the most important sources (particularly municipal and sanitary waste management, and recreational and tourism activities). Litter from maritime sources is less important than in the North East Atlantic, with the probable exception of fishing (HELCOM, 2013 in Interwies et al, 2013).

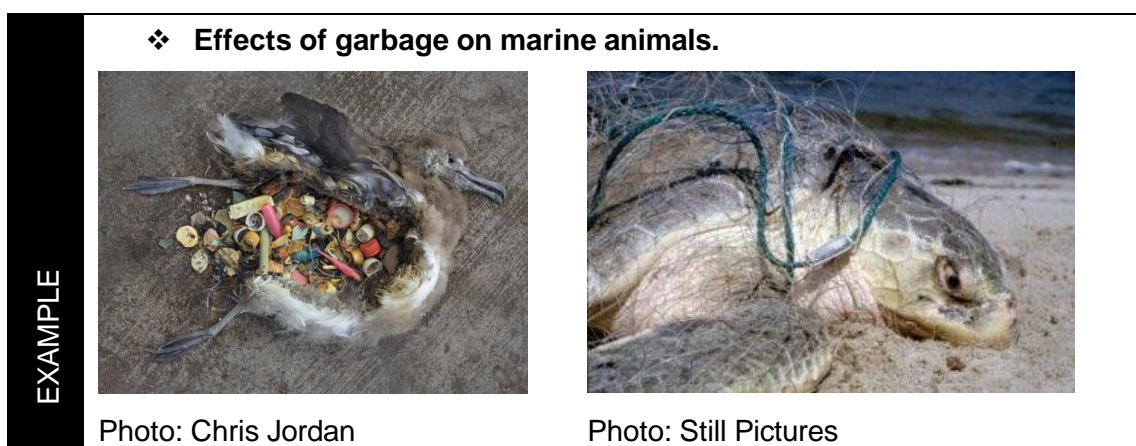
As per the other sea basins, plastics make up a high proportion of litter in the Mediterranean, on beaches (37-93 per cent), in floating litter (60-83 per cent), and on the sea floor (36-90 per cent) (UNEP, 2009). The most commonly found items on beaches are sanitary items (mostly cotton bud sticks), cigarette butts, and packaging items and bottles. Lost fishing gears are also considered to be of importance.

1.2. Impacts of marine litter

It is generally recognized that marine litter causes negative ecological, economic and social impacts. Given the prevalence of marine debris and plastics in particular, marine organisms are likely to encounter litter items.

☞ **The detrimental consequences of these encounters are mainly as a result of ingestion and entanglement, but other impacts may include the alteration, damage and degradation of benthic habitats, and the transport of alien invasive species (Katsanevakis, 2008).**

A study of reported encounters with marine litter found that 57 per cent of reported encounters were with rope and netting, plastic fragments (11 per cent), packaging (10 per cent), other fishing related litter (8 per cent) and microplastics (6 per cent) (CBD, 2012). This clearly indicates that lost and abandoned fishing gear is an especially problematic form of marine debris.



With respect to ingestion, at least 43 per cent of cetacean species, all species of marine turtles, approximately 44 per cent of the world's seabird species and many species of fish have been reported to ingest marine litter (Katsanevakis, 2008). The most comprehensive data available on ingestion is on northern fulmars. The analysis of the stomach contents of beached fulmars in the Southern North Sea indicates that 95 per cent contain plastics, in

average 35 pieces per bird (van Franeker et al, 2011). Ingestion of microplastics is also common. In the Clyde Sea 83 per cent of *Nephrops* sampled contained plastics (mainly fibres) in their stomachs (Murray and Cowie, 2011), and in the English Channel 36.5 per cent of individuals sampled (spanning ten pelagic and demersal fish species) had plastics in their gastrointestinal tracts (Lusher et al, 2013). Ingestion can cause harm physically through choking, obstruction of the gastrointestinal tract leading to starvation or malnutrition, or internal injury and infection. It can also cause harm through chemical contamination, as certain items of marine litter, especially plastics, may contain toxic substances which cause death or reproductive failure in certain marine organisms.

Harm and death from entanglement in litter items is more direct and obvious than from ingestion and is more frequently reported. At one colony Votier et al (2011) found on average 63 northern gannets are entangled each year, totalling 525 individuals over eight years. The prevalence and composition of fishing gear debris in northern gannet nests in a colony in the Gulf of St Lawrence has been found to correlate to fishing effort (Bond et al, 2012). Mean annual entanglement of grey seals in southwest England ranged from 3.6 per cent to 5 per cent between 2004 and 2008, and of the 58 entanglement cases, 64 per cent had serious injuries (Allen et al, 2012). The long average waste degradation times makes the impact of marine litter on the marine fauna more severe (Figure 8).

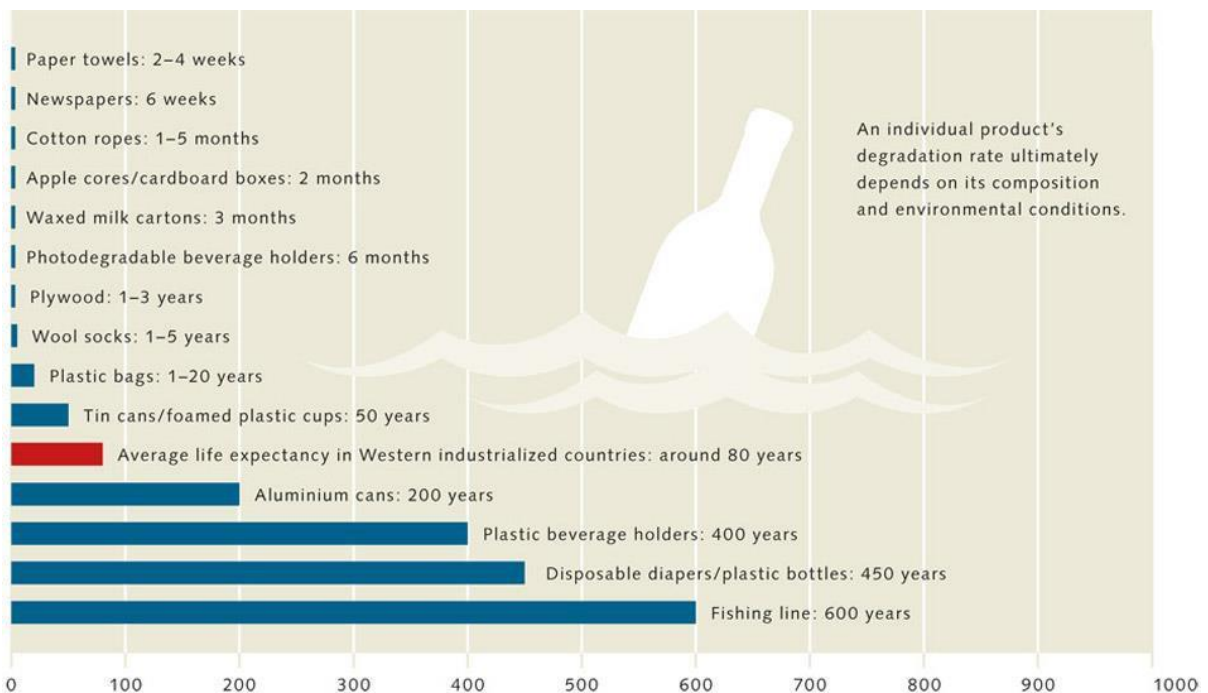


Figure 8: Average waste degradation times. (source: National Oceanic and Atmospheric Administration NOAA).

Studies assessing the socio-economic impacts of marine litter are less common. One impact reported is harm to human health and safety, from sewage related waste presenting a health risk to bathing waters for example, or hazardous materials such as syringes and glass on beaches (ten Brink et al, 2009). Entanglement of swimmers and divers in submerged or floating debris has also been reported. Entanglement of propellers also presents a safety issue for mariners. In 2008 there were 286 rescues to vessels with fouled propellers in UK waters at a cost of between €830,000 and €2,189,000 (Mouat et al, 2010). Similarly, in 2005, the US Coastguard made 269 rescues to incidents involving marine litter resulting in 15 deaths, 116 injuries and \$3 million in property damage (Moore, 2008).

Marine litter also has negative economic effects on the fishing sector, through the loss of fish stocks to ghost fishing or spoiled catches through contamination with debris, for example. Research focusing on the Shetland fishing fleet found that marine litter could cost a vessel up to £30,000 a year (Hall, 2000). The same applies to the aquaculture industry, a growing sector in Europe, for which entangled propellers and blocked intake pipes present the most common problems, resulting in costly repairs and lost time.

Marine litter can also reduce tourism revenue and consequently weaken coastal economies, as studies have indicated that beach cleanliness is of high importance to potential visitors (Mouat et al, 2010). The cost of cleaning up beaches has been estimated at approximately €10.4 million per year in the Netherlands and Belgium, and €18 million annually for UK municipalities (Mouat et al, 2010).

Other sectors that can face similar problems and therefore costs include the shipping industry, harbours and mariners, power stations, and coastal agriculture (Mouat et al, 2010).

1.3. Ships' garbage as a source of marine litter

The primary **ocean-based sources** of marine litter are:

- merchant shipping, ferries and cruise liners;
- fishing vessels, particularly with respect to lost or abandoned fishing gear;
- military fleets and research vessels;
- pleasure craft;
- offshore oil and gas platforms; and
- aquaculture farms (UNEP, 2009).

Garbage from ships can be just as deadly to marine life as oil or chemicals. The greatest danger comes from plastic, which can float for years. Fish and marine mammals can in some cases mistake plastics for food and they can also become trapped in plastic ropes, nets, bags and other items - even such innocuous items as the plastic rings used to hold cans of beer and drinks together.

Garbage from ships includes all kinds of food wastes, domestic wastes and operational wastes, all plastics, cargo residues, incinerator ashes, cooking oil, fishing gear, and animal carcasses generated during the normal operation of the ship. Garbage, including everyday items such as cigarette butts, plastic bags, bottles, cans and discarded fishing gear, are common causes of marine pollution.

These objects, whether discarded intentionally, or simply blown overboard, contribute to increasing pressures on marine ecosystems. Most of our garbage today is made from non-biodegradable products such as plastic, which persists in the marine environment for potentially thousands of years.

Garbage is hazardous to marine life and other users of our waterways. Marine animals and sea birds can mistake plastic material for food, and often end up dying a slow and painful death from starvation or strangulation. Ropes and plastic material can get caught in propellers and block water intakes causing major damage or even loss of income while a ship is out of service for repairs.

Types of waste that may be disposed of properly include:

- food waste including scraps
- paper products
- rags
- glass
- metal
- bottles
- crockery
- wire residues
- fishing gear
- nets
- bait boxes
- wood products
- packaging material
- deck sweepings
- all plastics.

All ship operators need to manage the use and disposal of all garbage generated aboard correctly.

MEPSEAS project is directly in line with the implementation of Sustainable Development Goal 14 (SDG14): 'Conserve and sustainably use the oceans, seas and marine resources for sustainable development'. Clearly reaching that goal will require far reaching global-to-local action.

For decades, humans have assumed the ocean was so vast and limitless that they could take out of it as much as they wanted and use it as a garbage bin as much as they wanted. This has resulted in a dramatic decline of marine biodiversity, as well as overfishing and wide-spread pollution. Plastics are now omnipresent, from the deepest ocean trenches to the most remote islands. On top of that, climate change is already resulting in sea level rise, changes in ocean currents (that are vital climate regulators) and acidification. We cannot go on living as if we had several blue planets at our disposal. The international community needs vision, foresight, purpose and strength of will and IMO, for its part, remains committed to reducing the negative impact of shipping's daily operations on the environment.

2. References and Other Sources of Information

Information on sources and impact of marine debris on United States Environmental Protection Agency website: <http://water.epa.gov/type/oceb/marinedebris/moreinfo.cfm>

United Nations Environmental Programme (UNEP) website about marine litter: <http://www.unep.org/regionalseas/marinelitter/about/default.asp>

Review of the current state of knowledge regarding marine litter in wastes dumped at sea under the London Convention and Protocol. Published in 2016 by the Office for the London Convention/Protocol and Ocean Affairs. Available at: <http://www.imo.org/en/MediaCentre/MeetingSummaries/LCLP/Pages/LC-38-LP-11.aspx>

OSPAR Commission, 2009: "Assessment of the impacts of shipping on the marine environment".

Website about the issue of ghost fishing: www.ghostfishing.org

Kühn, S. Bravo Rebolledo E.L. & Van Franeker, J.A. 2015. Deleterious effects of litter on marine life. pp 75-116 In: Bergmann, M., Gutow, L., and Klages, M. (eds). Marine Anthropogenic Litter. Springer, Berlin.

Vlachogianni, Th., Anastasopoulou, A., Fortibuoni, T., Ronchi, F., Zeri, Ch., 2017. Marine Litter Assessment in the Adriatic and Ionian Seas. IPA-Adriatic DeFishGear Project, MIO-ECSDE, HCMR and ISPRA. pp. 168 (ISBN: 978-960-6793-25-7)

Veiga, J.M., Fleet, D., Kinsey, S., Nilsson, P., Vlachogianni, T., Werner, S., Galgani, F., Thompson, R.C., Dagevos, J., Gago, J., Sobral, P. and Cronin, R.; 2016; Identifying Sources of Marine Litter. MSFD GES TG Marine Litter Thematic Report; JRC Technical Report; EUR 28309; doi:10.2788/018068

Information about segregation of galley waste, UK P&I Club:

<http://www.ukpandi.com/knowledge/article/431-09-05-galley-garbage-segregation-worldwide-1730/>

Seas At Risk website on marine litter: <http://www.seas-at-risk.org/n2.php?page=489>

United States National Oceanic and Agricultural Agency (NOAA) marine debris program: <http://marinedebris.noaa.gov/about-us>

United States National Oceanic and Agricultural Agency (NOAA) economic study shows marine debris costs California residents millions of dollars:

<http://marinedebris.noaa.gov/research/new-economic-study-shows-marine-debris-costs-california-residents-millions-dollars>

The Ocean Health Index is a collaborative effort, made possible through contributions from more than 65 scientists/ocean experts and partnerships between organizations. The Index calculates an annual global score that assesses the condition of marine ecosystems. Website available at: <http://www.oceanhealthindex.org/>

The World Ocean Review series are comprehensive reports about the state of the world's oceans and their interplay with ecological, economic and socio-political conditions. Its aim is to increase public awareness of the interconnected nature of the diverse aspects of the marine environment and thus to boost marine conservation. Information about marine litter available at: <http://worldoceanreview.com/en/wor-1/pollution/litter/>

ISO Standard ISO 21070 (2011) on Ships and marine technology - Marine environment protection - Management and handling of shipboard garbage. More information available at:

http://www.iso.org/iso/catalogue_detail.htm?csnumber=51003

Information about how to gather data required for the classification as substances Harmful to the Marine Environment (HME), UK P&I Club:

<http://www.ukpandi.com/fileadmin/uploads/uk-pi/LP%20Documents/MARPOL%20Annex%20V%20-%20Checklist%20Updated.pdf>

Simplified overview of the revised MARPOL Annex V discharge provisions:

<http://www.imo.org/OurWork/Environment/PollutionPrevention/Garbage/Documents/Annex%20V%20discharge%20requirements%2001-2013.pdf>

IMO website on the prevention of pollution by garbage from ships:
<http://www.imo.org/OurWork/Environment/PollutionPrevention/Garbage/Pages/Default.aspx>

IMO amendments to the Annex of the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973 (revised MARPOL Annex V), adopted at 15 July 2011 (Resolution MEPC.201(62)).

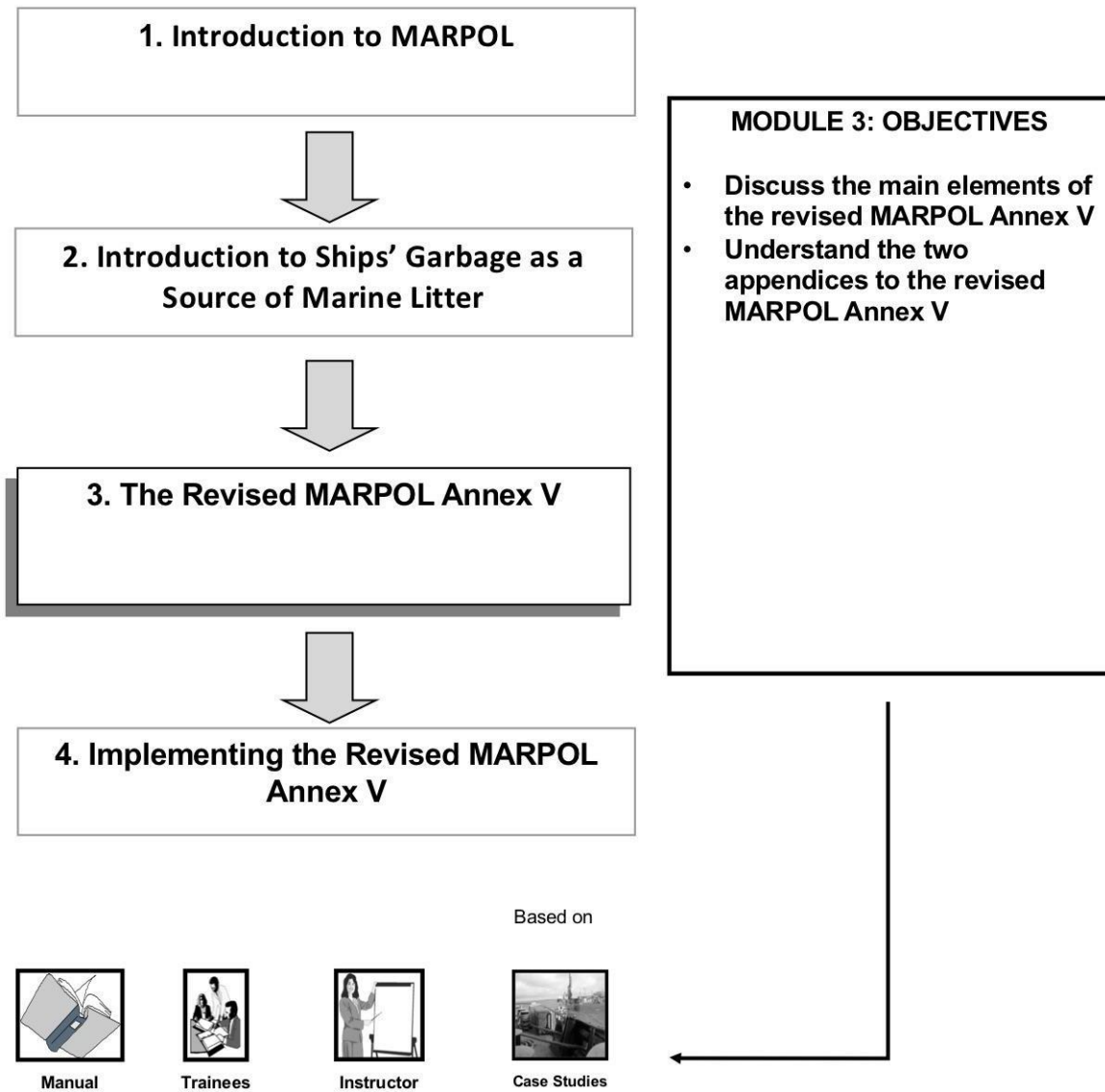
IMO Guidelines for the implementation of MARPOL Annex V (Resolution MEPC.295(71) adopted on 7 July 2017),

IMO Guidelines for the development of garbage management plans (Resolution MEPC.220(63) adopted on 2 March 2012)

Unger A., Harrison N., 2016, "Fisheries as a source of marine debris on beaches in the United Kingdom", Marine Pollution Bulletin

MEPSEAS Training Course on the Legal Implementation of the Revised MARPOL Annex V

3



Module Aims & Objectives of Module 3

This module aims to provide a detailed information on the revised MARPOL Annex V and its accompanying guidelines. At the end of this module participants will be able to:

- Discuss the main elements of the revised MARPOL Annex V
- Understand the two appendices to the revised MARPOL Annex V

Table of Content Module 3

| | |
|--|-----------|
| 1. The IMO's response: MARPOL Annex V..... | 47 |
| 1.1. The revision of MARPOL Annex V..... | 47 |
| 1.2. Guidelines for the implementation of MARPOL Annex V..... | 47 |
| 2. General..... | 49 |
| 2.1. Definitions | 49 |
| 2.1.1. Annex V Regulation 1: Definitions and types of waste | 49 |
| 2.1.2. Definitions found in the 2017 Guidelines for the implementation of Annex V of MARPOL | 52 |
| 2.2. Regulation 2: Application | 53 |
| 2.3. Regulation 3: General prohibition on discharge of garbage into the sea..... | 53 |
| 2.4. Regulation 4: Discharge of garbage outside special areas | 53 |
| 2.5. Regulation 5: Special requirements for discharge of garbage from fixed or floating platforms | 54 |
| 2.6. Regulation 6: Discharge of garbage within special areas | 54 |
| 2.7. Regulation 7: Exceptions | 56 |
| 2.8. Regulation 8: Reception facilities | 58 |
| 2.9. Regulation 9: Port State control on operational requirements..... | 58 |
| 2.10. Regulation 10: Placards, garbage management plans and garbage record-keeping..... | 58 |
| 2.10.1. Regulation 10.1 Placards | 59 |
| 2.10.2. Regulation 10.2 Garbage management plans..... | 59 |
| 2.10.3. Garbage Record Book..... | 63 |
| 2.11. Management of cargo residues of solid bulk cargoes | 64 |
| 3. Verification of compliance with the provisions of Annex V | 67 |
| 3.1. Regulation 11..... | 68 |
| 3.2. Regulation 12..... | 68 |
| 4. Chapter 3: International Code for Ships Operating in Polar Waters..... | 68 |
| 4.1. Regulation 13: Definitions | 68 |
| 4.2. Regulation 14: Application and Requirements | 68 |
| 5. References and Other Sources of Information | 69 |

1. The IMO's response: MARPOL Annex V

Annex V to the MARPOL Convention seeks to eliminate and reduce the amount of garbage being discharged into the sea from ships. The original MARPOL Annex V was based on the belief that the ocean would be unharmed by the discharge of most garbage - with the exception of plastic - as long as this took place far enough away from the shore, and severely restricted discharges of other garbage from ships in coastal waters and "Special Areas". Although the Annex V is optional, it did receive a sufficient number of ratifications to enable entry into force on 31 December 1988.

1.1. The revision of MARPOL Annex V

The accumulation of garbage on beaches and floating in vast patches on the oceans has caused a re-evaluation about what is acceptable in terms of intentional discharge from ships. Therefore the Marine Environment Protection Committee (MEPC), at its 55th session in October 2006, established an intersessional correspondence group to develop a framework for a comprehensive review of MARPOL Annex V. This review took into account resolution 60/30 of the UN General Assembly, which had invited IMO to review MARPOL Annex V, in consultation with relevant organizations and bodies, and to assess its effectiveness in addressing sea-based sources of marine debris. In July 2011 MEPC 62 adopted, by resolution MEPC.201(62), the revised MARPOL Annex V which entered into force on 1 January 2013 and was further amended by resolutions

- MEPC.216(63),
- MEPC.246(66),
- MEPC.265(68) and
- MEPC.277(70).

☞ **Under the revised MARPOL Annex V, garbage includes all kinds of food wastes, domestic wastes and operational wastes, all plastics, cargo residues (both harmful to the marine environment (HME) and non harmful to the marine environment (non-HME), incinerator ashes, cooking oil, fishing gear, animal carcasses and E-waste generated during the normal operation of the ship and liable to be disposed of continuously or periodically.**

☞ **Garbage does not include fresh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as a result of aquaculture activities.**

1.2. Guidelines for the implementation of MARPOL Annex V

In July 2017, MEPC 71 adopted the 2017 Guidelines for the implementation of MARPOL Annex V (resolution MEPC.295(71)) ("Implementation Guidelines"), and the 2012 Guidelines for the development of garbage management plans (resolution MEPC.220(63)).

An important item in the guidelines is the management of cargo residues of solid bulk cargoes, Section 3 of the Implementation Guidelines. Cargo residues are considered harmful to the marine environment and therefore subject to regulations 4.1.3 and 6.1.2.1 of the revised Annex V, if they meet the criteria of Appendix I of MARPOL Annex V. In this respect a link has been made with the International Maritime Solid Bulk Cargoes Code (IMSBC Code).

In response to the need to provide a mandatory framework for ships operating in polar waters due to the additional demands on ships, their systems and operation, IMO has adopted the International Code for Ships Operating in Polar Waters (Polar Code; Resolution MEPC.264(68)). Several provisions of the Polar Code have been introduced in MARPOL to make the environment-related provisions of the Polar Code mandatory, and thus ships trading the Polar Regions have to comply with strict environmental provisions specific to harsh conditions in Polar waters – the Arctic waters and the Antarctic area.

Simplified overview of wastes falling within the scope of the revised MARPOL Annex V, taking into account the implementation guidelines (resolution MEPC.259(71)) is presented in Table 4.

Table 4: Overview of wastes within the scope of MARPOL Annex V and outside its scope.

| Within scope of MARPOL Annex V | Outside scope of MARPOL Annex V |
|--|--|
| Animal carcasses: bodies of animals carried as cargo. <i>Note:</i> also includes fish and shellfish | Carcasses of animals resulting from mortalities in excess of those generated during the normal operation of a ship |
| Cargo residues (not covered by other Annexes) which remain on the deck or in holds following loading/unloading, incl. loading/unloading excess or spillage, whether in wet/dry condition or entrained in wash waters | Cargo dust remaining on the deck after sweeping dust on the external surfaces of the ship |
| Cooking oil | <u>T</u> he food itself that is prepared using these oils |
| Domestic wastes (all types of wastes, not covered by other Annexes, that are generated in the accommodation spaces) | <u>G</u> rey water, dishwater |
| Fishing gear | <u>F</u> ishing gear that is released into the water with the intention of later retrieval, such as fish aggregating devices (FADs), traps and static nets |
| Food wastes | <u>R</u> eleasing small quantities of food into the sea for the specific purpose of fish feeding in connection with fishing or tourist operation |
| Garbage | <u>F</u> resh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as result of aquaculture activities |
| Incinerator ashes | |
| Plastic (incl. synthetic ropes, synthetic fishing nets, plastic garbage bags and incinerator ashes from plastic products) | |
| <u>O</u> perational wastes: all solid wastes (incl. slurries) not covered by other Annexes that are collected on board during normal maintenance/operations, or used for cargo | - grey water • bilge water • "other similar discharges essential to the |

| | |
|---|--|
| <p>stowage/handling. Includes:</p> <ul style="list-style-type: none"> - cleaning agents/additives contained in cargo hold and external wash water - ash and clinkers from shipboard incinerators and coal-burning boilers | <p>operation of a ship”, such as:</p> <ul style="list-style-type: none"> • boiler/economizer blowdown; • boat engine wet exhaust; • chain locker effluent; • controllable pitch propeller and thruster hydraulic fluid and other oil to sea interfaces (e.g. thruster bearings, stabilizers, rudder bearings, etc.); • distillation/reverse osmosis brine; • elevator pit effluent; • firemain systems water; • freshwater layup; • gas turbine washwater; • motorgasoline and compensating discharge; • machinery wastewater; • pool, spa water and recreational waters; • sonar dome discharge; and • welldeck discharges. |
|---|--|

Currently MARPOL Annex V provides regulations for the prevention of pollution by garbage from ships and consists of three chapters and two appendices:

1. Chapter 1 - General (regulations 1 to 10);
2. Chapter 2- Verification of compliance with the provisions of this annex (regulations 11 and 12);
3. Chapter 3 - International Code for Ships Operating in Polar Waters (regulations 13 and 14);
4. Appendix 1 – Criteria for the classification of solid bulk cargoes as harmful to the marine environment; and
5. Appendix 2 – Form of Garbage Record Book.

2. General

This section provides a review of the provisions contained in MARPOL Annex V. Regulations 1 to 10 contain general obligations.

2.1. Definitions

2.1.1. Annex V Regulation 1: Definitions and types of waste

Regulation 1 presents the definitions to be applied to MARPOL Annex V. One of the goals of the revision was that all expressions used in MARPOL Annex V should be covered by a definition. This goal has been achieved which makes the revised Annex more transparent and easy to implement and enforce.

In the revised MARPOL Annex V the following definitions are to be applied:

“Animal carcasses” means the bodies of any animals that are carried on board as cargo and that die or are euthanized during the voyage.

“Audit Scheme” means the IMO Member State Audit Scheme established by the Organization and taking into account the guidelines developed by the Organization.¹

“Audit Standard” means the Code for Implementation.

“Audit” means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

“Cargo residues” means the remnants of any cargo which are not covered by other Annexes to the present Convention and which remain on the deck or in holds following loading or unloading, including loading and unloading excess or spillage, whether in wet or dry condition or entrained in wash water but does not include cargo dust remaining on the deck after sweeping or dust on the external surfaces of the ship.

“Code for Implementation” means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

“Cooking oil” means any type of edible oil or animal fat used or intended to be used for the preparation or cooking of food, but does not include the food itself that is prepared using these oils.

“Domestic wastes” means all types of wastes not covered by other Annexes that are generated in the accommodation spaces on board the ship. Domestic wastes does not include grey water.

“En route” means that the ship is underway at sea on a course or courses, including deviation from the shortest direct route, which as far as practicable for navigational purposes, will cause any discharge to be spread over as great an area of the sea as is reasonable and practicable.

“Fishing gear” means any physical device or part thereof or combination of items that may be placed on or in the water or on the sea-bed with the intended purpose of capturing, or controlling for subsequent capture or harvesting, marine or fresh water organisms.

“Fixed or floating platforms” means fixed or floating structures located at sea which are engaged in the exploration, exploitation or associated offshore processing of sea-bed mineral resources.

“Food wastes” means any spoiled or unspoiled food substances and includes fruits, vegetables, dairy products, poultry, meat products and food scraps generated aboard ship.

“Garbage” means all kinds of food wastes, domestic wastes and operational wastes, all plastics, cargo residues, cooking oil, fishing gear, and animal carcasses generated during the normal operation of the ship and liable to be disposed of continuously or periodically except those substances which are defined or listed in other Annexes to the present Convention. Garbage does not include fresh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as a result of aquaculture activities which involve the transport of fish including shellfish for placement in the aquaculture facility and the transport of harvested fish including shellfish from such facilities to shore for processing.

¹ Refer to the Framework and Procedures for the IMO Member State Audit Scheme (resolution A.1067(28))

“Incinerator ashes” means ash and clinkers resulting from shipboard incinerators used for the incineration of garbage.

“Nearest land.” The term "from the nearest land" means from the baseline from which the territorial sea of the territory in question is established in accordance with international law, except that, for the purposes of the present Annex, "from the nearest land" off the north-eastern coast of Australia shall mean from a line drawn from a point on the coast of Australia in:

“Operational wastes” means all solid wastes (including slurries) not covered by other Annexes that are collected on board during normal maintenance or operations of a ship, or used for cargo stowage and handling. Operational wastes also includes cleaning agents and additives contained in cargo hold and external wash water. Operational wastes does not include grey water, bilge water, or other similar discharges essential to the operation of a ship, taking into account the guidelines developed by the Organization.

“Plastic” means a solid material which contains as an essential ingredient one or more high molecular mass polymers and which is formed (shaped) during either manufacture of the polymer or the fabrication into a finished product by heat and/or pressure. Plastics have material properties ranging from hard and brittle to soft and elastic. For the purposes of this annex, "all plastics" means all garbage that consists of or includes plastic in any form, including synthetic ropes, synthetic fishing nets, plastic garbage bags and incinerator ashes from plastic products.

“Recycling” means the activity of segregating and recovering components and materials for reprocessing.

“Reuse” means the activity of recovering components and materials for further use without reprocessing.

“Special area” means a sea area where for recognized technical reasons in relation to its oceanographic and ecological condition and to the particular character of its traffic the adoption of special mandatory methods for the prevention of sea pollution by garbage is required.

latitude 11°00′ S, longitude 142°08′ E
latitude 24°42′ S, longitude 153°15′ E.
thence to a point latitude 09°00′ S, longitude 144°30′ E,
thence to a point latitude 09°10′ S, longitude 143°52′ E,
thence to a point latitude 10°00′ S, longitude 142°00′ E,
thence to a point latitude 10°41′ S, longitude 145°00′ E,
thence to a point latitude 13°00′ S, longitude 145°00′ E,
thence to a point latitude 15°00′ S, longitude 146°00′ E,
thence to a point latitude 17°30′ S, longitude 147°00′ E,
thence to a point latitude 21°00′ S, longitude 152°55′ E,
thence to a point latitude 24°30′ S, longitude 154°00′ E,
thence to a point on the coast of Australia in
to a point in latitude 10°35′ S, longitude 141°55′ E,

2.1.2. Definitions found in the 2017 Guidelines for the implementation of Annex V of MARPOL

In addition to the definitions in MARPOL Annex V, also the *2017 Guidelines for the implementation of Annex V of MARPOL* (resolution MEPC.295(71)) contain the following relevant definitions:

“Dishwater” means the residue from the manual or automatic washing of dishes and cooking utensils which have been pre-cleaned to the extent that any food particles adhering to them would not normally interfere with the operation of automatic dishwashers.

“E-waste” means electrical and electronic equipment used for the normal operation of the ship or in the accommodation spaces, including all components, subassemblies and consumables, which are part of the equipment at the time of discarding, with the presence of material potentially hazardous to human health and/or the environment.

“Grey water” means drainage from dishwater, shower, laundry, bath and washbasin drains. It does not include drainage from toilets, urinals, hospitals, and animal spaces, as defined in regulation 1.3 of MARPOL Annex IV (sewage), and it does not include drainage from cargo spaces. Grey water is not considered garbage in the context of Annex V.

According to the Implementation Guidelines “other similar discharges” essential to the operation of a ship include, but are not limited to, the following:

- boiler/economizer blowdown;
- boat engine wet exhaust;
- chain locker effluent;
- controllable pitch propeller and thruster hydraulic fluid and other oil to sea interfaces (e.g. thruster bearings, stabilizers, rudder bearings, etc.);
- distillation/reverse osmosis brine;
- elevator pit effluent;
- firemain systems water;
- freshwater layup;
- gas turbine washwater;
- motor gasoline and compensating discharge;
- machinery wastewater;
- pool, spa water and recreational waters;
- sonar dome discharge; and
- welldeck discharges.

Therefore, these types of discharges are not to be considered as MARPOL Annex V.

It can also be noted that the implementation guidelines provide additional guidance regarding cleaning agents or additives, as their character does have an impact on the discharge requirements: cleaning agents/additives may be discharged into the sea as long as they are not harmful to the marine environment (HME).

A cleaning agent or additive is considered not harmful to the marine environment, if it:

- is not a “harmful substance” in accordance with the criteria in MARPOL Annex III; and
- does not contain any components which are known to be carcinogenic, mutagenic or reprotoxic (CMR).

The ship's record should contain evidence provided by the producer of the cleaning agent or additive that the product meets the criteria for not being harmful to the marine environment. To provide an assurance of compliance, a dated and signed statement to this effect from the product supplier would be adequate for the purposes of a ship's record. This might form part

of a Safety Data Sheet or be a stand-alone document, but this should be left to the discretion of the producer concerned.

2.2. Regulation 2: Application

The revised MARPOL Annex V applies to all ships, unless expressly provided otherwise. This means the requirements of Annex V are applicable to all vessels of any type whatsoever operating in the marine environment, from merchant ships to fixed or floating platforms to non-commercial ships like pleasure crafts and yachts.

2.3. Regulation 3: General prohibition on discharge of garbage into the sea

Under the older versions of MARPOL Annex V the disposal of most types of garbage at sea was allowed (provided it was disposed at specific distances from the nearest land), unless it was explicitly forbidden (e.g. discharge of plastics was not allowed, while discharge outside special areas of incinerator ashes and ground rags, metal, glass, etc. was allowed)

The general discharge principle of the revised MARPOL Annex V is that the discharge of all garbage into the sea is prohibited, except when explicitly allowed. In addition, specifically identified types of garbage (food wastes, cargo residues, cleaning agents/additives and animal carcasses) are allowed to be discharged only under strict conditions.

Exceptions with respect to the safety of a ship and those on board and accidental loss are contained in regulation 7 of MARPOL Annex V.

1. Discharge of all garbage into the sea is prohibited, except as provided otherwise in regulations 4, 5, 6 and 7 of this Annex and section 5.2 of part II-A of the Polar Code, as defined in regulation 13.1 of this Annex.
2. Except as provided in regulation 7 of this Annex, discharge into the sea of all plastics, including but not limited to synthetic ropes, synthetic fishing nets, plastic garbage bags and incinerator ashes from plastic products is prohibited.
3. Except as provided in regulation 7 of this Annex, the discharge into the sea of cooking oil is prohibited.

2.4. Regulation 4: Discharge of garbage outside special areas

The revised Annex V includes special requirements for the discharge of garbage within and outside special areas, in polar waters, and from fixed or floating platforms.

The discharge of garbage into the sea outside special areas is prohibited. However, there are provisions that allow the discharge of individually identified types of garbage, only while the ship is en route and as far as practicable from the nearest land, but in any case not less than:

Food waste:

- 3 nautical miles from the nearest land for food wastes which have been passed through a comminuter or grinder. Such comminuted or ground food wastes shall be capable of passing through a screen with openings no greater than 25 mm;

- 12 nautical miles from the nearest land for food wastes that have not been comminuted or ground.

Cargo residues that cannot be recovered using commonly available methods for unloading:

- 12 nautical miles from the nearest land;
- these cargo residues shall not contain any substances classified as harmful to the marine environment (according to Appendix I of MARPOL Annex V).

Animal carcasses:

- as far from the nearest land as possible;
- taking into account chapters 2.12 and 2.13 of the implementation guidelines.

Solid bulk cargoes as defined in regulation VI/1-1.2 of the International Convention for the Safety of Life at Sea (1974), as amended (SOLAS), other than grain, shall be classified in accordance with appendix I of MARPOL Annex V, and declared by the shipper as to whether or not they are harmful to the marine environment.

Cleaning agents or additives contained in cargo hold, deck and external surfaces wash water may be discharged into the sea, but these substances must not be harmful to the marine environment (according to 1.7.5 of the implementation guidelines).

When garbage is mixed with or contaminated by other substances prohibited from discharge or having discharge requirements, the more stringent requirements shall apply.

2.5. Regulation 5: Special requirements for discharge of garbage from fixed or floating platforms

Additional restrictions apply to fixed or floating platforms while they are engaged in exploration or exploitation of the sea-bed, and to other ships within 500 m of such platforms:

- discharge into the sea of any garbage is prohibited from fixed or floating platforms, and from all other ships when alongside or within 500 meters of such platforms;
- food wastes may be discharged into the sea from fixed or floating platforms located more than 12 nautical miles from the nearest land and from all other ships when alongside or within 500 meters of such platforms, but only when the wastes have been passed through a comminuter or grinder. Such comminuted or ground food wastes shall be capable of passing through a screen with openings no greater than 25 mm.

2.6. Regulation 6: Discharge of garbage within special areas

The special areas established under Annex V are:

- the Mediterranean Sea area
- the Baltic Sea area
- the Black Sea area
- the Red Sea area
- the Gulfs area
- the North Sea area
- the Wider Caribbean Region and
- the Antarctic area

These are sea areas where for recognized technical reasons relating to their oceanographic and ecological condition and the particular character of traffic, such as heavy maritime traffic, low water exchange, extreme ice states, endangered marine species, etc., special discharge requirements for garbage are applied:

Food waste: can only be discharged into the sea when the ship is en route and as far as practicable from the nearest land, and:

- as far as practicable from the nearest land, but not less than 12 nautical miles from the nearest land or the nearest ice shelf;
- food wastes shall be comminuted or ground and shall be capable of passing through a screen with openings no greater than 25 mm;
- food wastes shall not be contaminated by any other garbage type;
- discharge of introduced avian products, including poultry and poultry parts, is not permitted in the Antarctic unless it has been treated to be made sterile.
-

Cargo residues that cannot be recovered using commonly available methods for unloading can only be discharged into the sea when the ship is en route and when the following conditions are satisfied:

- cargo residues, contained in hold washing water do not include any substances classified as harmful to the marine environment (according to the criteria set out in appendix I of MARPOL Annex V);
- solid bulk cargoes as defined in regulation VI/1-1.2 of SOLAS, as amended, other than grain, shall be classified in accordance with appendix I of this Annex, and declared by the shipper as to whether or not they are harmful to the marine environment²
- both the port of departure and the next port of destination are within the special area and the ship will not transit outside the special area between those ports;
- no adequate reception facilities are available at those ports, taking into account chapter 5 of the implementation guidelines;
- when the above requirements have been fulfilled, discharge of cargo hold washing water containing residues shall be made as far as practicable from the nearest land or the nearest ice shelf and not less than 12 nautical miles from the nearest land or the nearest ice shelf.

Cleaning agents or additives contained in deck and external surfaces wash water may be discharged into the sea, but only if these substances are not harmful to the marine environment (taking into account paragraph 1.7.5 of the implementation guidelines).

For the Antarctic area in addition the following specific rules apply:

- each Party at whose ports ships depart en route to or arrive from the Antarctic area, undertakes to ensure that as soon as practicable adequate facilities are provided for the reception of all garbage from all ships, without causing undue delay, and according to the needs of the ships using them;
- each Party shall ensure that all ships entitled to fly its flag, before entering the Antarctic area, have sufficient capacity on board for the retention of all garbage,

² For ships engaged in international voyages, reference is made to section 4.2.3 of the International Maritime Solid Bulk Cargoes (IMSBC) Code; for ships not engaged in international voyages, other means of declaration may be used, as determined by the Administration

while operating in the area and have conducted arrangements to discharge such garbage at a reception facility after leaving the area.

When garbage is mixed with or contaminated by other substances prohibited from discharge or having discharge requirements, the more stringent requirements shall apply.

2.7. Regulation 7: Exceptions

The general exception of the discharge requirements necessary for the purpose of securing the safety of a ship and those on board or saving life at sea is also applicable for garbage. In addition, there is an exception to the en-route requirement for the discharge of food waste, where it is clear that retention on board of this waste presents an imminent health risk to the people on board.

Regulations 3, 4, 5 and 6 of Annex V and section 5.2 of chapter 5 of part II-A of the Polar Code shall not apply to:

- The discharge of garbage from a ship necessary for the purpose of securing the safety of a ship and those on board or saving life at sea; or
- The accidental loss of garbage resulting from damage to a ship or its equipment, provided that all reasonable precautions have been taken before and after the occurrence of the damage, to prevent or minimize the accidental loss; or
- The accidental loss of fishing gear from a ship provided that all reasonable precautions have been taken to prevent such loss; or
- The discharge of fishing gear from a ship for the protection of the marine environment or for the safety of that ship or its crew.

Exception of en route:

- The en route requirements of regulations 4 and 6 and chapter 5 of part II-A of the Polar Code shall not apply to the discharge of food wastes where it is clear the retention on board of these food wastes presents an imminent health risk to the people on board.

It should be noted that according to regulation 10.6 of the revised MARPOL Annex V the accidental loss or discharge of fishing gear (as in the above mentioned regulations 7.1.3 and 7.1.4) which poses a significant threat to the marine environment or navigation, shall be reported to the State whose flag the ship is entitled to fly, and, where the loss or discharge occurs within waters subject to the jurisdiction of a coastal State, also to that coastal State.

It can also be noted that, according to paragraphs 1.7.7 and 1.7.8 of the implementation guidelines, the following activities should not be considered a discharge of garbage:

- releasing small quantities of food into the sea for the specific purpose of fish feeding in connection with fishing or tourist operations; and
- fishing gear that is released into the water with the intention of later retrieval, such as fish aggregating devices (FADs), traps and static nets.

Table 5 presents a schematic overview of the discharge prohibitions and restrictions.

Table 5: Summary of restrictions to the discharge of garbage into the sea under regulation 4, 5, and 6 of MARPOL Annex V and chapter 5 of part II-A of the Polar Code

| GARBAGE TYPE ³ | ALL SHIPS EXCEPT PLATFORMS ⁴ | | Regulation 5 Offshore platforms located more than 12 nm from nearest land and ships when alongside or within 500 metres of such platforms ⁴ |
|--|--|--|---|
| | Regulation 4 Outside special areas (Distances are from the nearest land) | Regulation 6 Within special areas (Distances are from nearest land or nearest ice-shelf) | |
| Food waste comminuted or ground ⁵ | ≥3 nm, en route and as far as practicable | ≥12 nm, en route and as far as practicable ⁶ | Discharge permitted |
| Food waste not comminuted or ground | ≥12 nm, en route and as far as practicable | Discharge prohibited | Discharge prohibited |
| Cargo residues ^{7, 8} not contained in washwater | ≥ 12 nm, en route and as far as practicable | Discharge prohibited | Discharge prohibited |
| Cargo residues ^{15, 16} contained in washwater | | ≥ 12 nm, en route and as far as practicable (subject to conditions in regulation 6.1.2 and paragraph 5.2.1.5 of part II-A of the Polar Code) | |
| Cleaning agents and additives ¹⁶ contained in cargo hold washwater | Discharge permitted | ≥ 12 nm, en route and as far as practicable (subject to conditions in regulation 6.1.2 and paragraph 5.2.1.5 of part II-A of the Polar Code) | Discharge prohibited |
| Cleaning agents and additives ⁶ in deck and external surfaces washwater | | Discharge permitted | |

³ When garbage is mixed with or contaminated by other harmful substances prohibited from discharge or having different discharge requirements, the more stringent requirements shall apply.

⁴ Offshore platforms located 12 nm from nearest land and associated ships include all fixed or floating platforms engaged in exploration or exploitation or associated processing of seabed mineral resources, and all ships alongside or within 500 m of such platforms.

⁵ Comminuted or ground food wastes must be able to pass through a screen with mesh no larger than 25 mm.

⁶ The discharge of introduced avian products in the Antarctic area is not permitted unless incinerated, autoclaved or otherwise treated to be made sterile.

⁷ Cargo residues means only those cargo residues that cannot be recovered using commonly available methods for unloading.

⁸ These substances must not be harmful to the marine environment.

| GARBAGE TYPE ³ | ALL SHIPS EXCEPT PLATFORMS ⁴ | | Regulation 5 Offshore platforms located more than 12 nm from nearest land and ships when alongside or within 500 metres of such platforms ⁴ |
|--|--|--|---|
| | Regulation 4 Outside special areas (Distances are from the nearest land) | Regulation 6 Within special areas (Distances are from nearest land or nearest ice-shelf) | |
| Animal Carcasses (should be split or otherwise treated to ensure the carcasses will sink immediately) | Must be en route and as far from the nearest land as possible. Should be >100 nm and maximum water depth | Discharge prohibited | Discharge prohibited |
| All other garbage including plastics, synthetic ropes, fishing gear, plastic garbage bags, incinerator ashes, clinkers, cooking oil, floating dunnage, lining and packing materials, paper, rags, glass, metal, bottles, crockery and similar refuse | Discharge prohibited | Discharge prohibited | Discharge prohibited |

2.8. Regulation 8: Reception facilities

The effectiveness of ships to comply with the discharge requirements of MARPOL depends largely upon the availability of adequate port reception facilities, especially within special areas. Hence, according to regulation 8 of the revised MARPOL Annex V all Governments are to ensure the provision of adequate reception facilities at ports and terminals for the reception of garbage without causing undue delay to ships, and according to the needs of the ships using them.

2.9. Regulation 9: Port State control on operational requirements

Provisions to extend port State control to cover operational requirements as regards prevention of marine pollution were adopted in 1994 and entered into force on 3 March 1996. Like similar amendments to the other MARPOL Annexes, regulation 9 of Annex V makes it clear that port State control officers can conduct an operational inspection on a foreign-flagged vessel at a port or an offshore terminal of its State "where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of pollution by garbage".

2.10. Regulation 10: Placards, garbage management plans and garbage record-keeping

Unlike the other Annexes of MARPOL the provisions of Annex V solely address discharges from ships, and therefore there are no specific equipment requirements under this Annex. However, shipowners or operators still need to make provisions for dealing with garbage on

board ships. Visibility of information, adequate planning and record keeping therefore are essential elements.

2.10.1. Regulation 10.1 Placards

Every ship of 12 meters or more in length overall and fixed or floating platforms shall display placards which notify the crew and passengers of the garbage discharge requirements.

The placards shall be written in the working language of the ship's crew and also in English, French or Spanish for ships travelling to other States' ports or offshore terminals.

Section 4 of the 2017 Implementation Guidelines provides additional information regarding the provision of placards:

- Placards should contain a summary declaration stating the prohibition and restrictions for discharging garbage from ships under MARPOL Annex V and the possible penalties for failure to comply. Governments are encouraged to develop appropriate placards for use by every ship of their registry of more than 12 metres in length overall and fixed and floating platforms.
- The declaration should be placed on a placard at least 12.5 cm by 20 cm, made of durable material and fixed in conspicuous and prominent places on board the ship. Placards should also be replaced when damage or wear compromises the readability of the declaration.
- The placards should also be placed in prominent places where crew will be working and living, and in areas where bins are placed for collection of garbage. These places include galley spaces, mess room(s), wardroom, bridge, main deck and other areas of the ship, as appropriate. The placards should be displayed at line of sight height and be printed in the working language of the crew. Ships which operate internationally will also have placards printed in English, French or Spanish, in accordance with regulation 10.1.2 of MARPOL Annex V.
- Where the ship carries passengers, placards also should be placed in prominent places where passengers are accommodated and congregate. These include cabins, all deck areas for recreational purposes open to passengers.

2.10.2. Regulation 10.2 Garbage management plans

All ships of 100 gross tonnage and above, every ship certified to carry 15 persons or more, and every fixed or floating platform shall carry a garbage management plan which the crew shall follow.

The garbage management plan shall provide written procedures for minimizing, collecting, storing, processing and disposing of garbage, including the use of the equipment on board. It shall also designate the person or person in charge of carrying out the plan. The garbage management plans shall be based on the guidelines developed by the Organization and written in the working language of the crew.

☞ **2012 Guidelines for the development of garbage management plans (resolution MEPC. 220(63))**

☞ **2017 Guidelines for the implementation of Annex V of MARPOL (resolution MEPC.295(71)).**

☞ **Other technical guidance on shipboard garbage handling including the ISO 21070 "Standard for the Management**

and handling of shipboard garbage”, outlining the best management practices for shipboard garbage management.





EXAMPLE

❖ Placards

Sample placards targeting crew and shipboard operations, fixed or floating platforms and ships operating within 500 metres of such platforms, and passengers are shown in Figures 1, 2 and 3 of the implementation guidelines, but other examples can also be found easily on the internet

Don't throw garbage overboard
You could be breaking the law
Any garbage discharge must be recorded

Annex V of MARPOL 73/78 applies to all ships and is an International Convention providing for a cleaner, safer marine environment. Discharge of all garbage into the sea is prohibited unless expressly provided for otherwise and then only when en route.

| | | |
|---|--|---|
|  WITHIN 3 MILES OF LAND AND ALL INLAND WATERWAYS. | Only certain cleaning agents contained within wash water may be discharged. | X YOU CANNOT THROW ANYTHING OVERBOARD |
|  BETWEEN 3 & 12NM OFFSHORE | ✓ YOU CAN THROW OVERBOARD: Food waste comminuted or ground to less than 25mm. This is not allowed in special areas. | X YOU CANNOT THROW OVERBOARD Any other form of garbage. |
|  GREATER THAN 12NM OFFSHORE | ✓ YOU CAN THROW OVERBOARD: Food waste, certain cargo residues contained in wash water and carcasses of animals. In special areas comminuted food waste, some cargo residues and cleaning agents but discharge is subject to further restrictions.* | X YOU CANNOT THROW OVERBOARD Any other form of garbage. |
|  OFFSHORE PLATFORMS MORE THAN 12NM FROM LAND AND ALL SHIPS WITHIN 500m OF THEM | ✓ YOU MAY BE ABLE TO DISCHARGE: Food waste comminuted or ground to less than 25mm. Local offshore regulations may apply therefore always check with the local administration prior to any discharge within the 500m zone. | X YOU CANNOT THROW OVERBOARD Any other form of garbage. |

MARPOL Anti-Pollution Regulations
 To IMO Resolution MEPC.201(62)

Violations of these requirements may result in civil penalties being imposed, as determined by current National Legislation. Garbage must be disposed of as described in the garbage management plan.

The following special areas have been created for the purposes of Annex V: The Mediterranean Sea area, Baltic Sea area, Black Sea area, Red Sea area, Gulfs area, North Sea area, Antarctic area and the Wider Caribbean region. In these areas only food waste if it has been comminuted or ground to less than 25mm may be discharged specific restrictions apply to avian products in the Antarctic area. In certain circumstances only, exceptions may also apply for, cargo residues contained within wash water and cleaning agents and additives contained in cargo hold and deck wash water which are not harmful to the marine environment. These discharges must be made on route and beyond 12 miles offshore. Detailed descriptions of the extent of these special areas may be found in Regulation 1 of Annex V of MARPOL 73/78. Additionally further local regulations such as off the north eastern coast of Australia may apply in various national waters. Please ensure you check the IMO web site for updates on special areas. www.imo.org

When garbage is mixed with or contaminated by other substances prohibited from discharge or having different discharge requirements, the more stringent requirements shall apply.

Cargo residues and cleaning agents which are harmful to the marine environment must not be discharged under any circumstance. * Discharge shall only be allowed if both the port of departure and the next port of destination are within the special area, the ship will not transit outside the special area and no adequate reception facilities are available at those ports.

There is evidence that different flag states and administrations have interpreted the MARPOL regulations in slightly differing ways, wherever possible this poster has aired on the side of caution when interpreting the regulations.

If in doubt don't throw anything overboard

Under the MARPOL agreement and U.S. federal law, it is illegal for any vessel to discharge plastic or garbage containing plastics into any waters. Additional restrictions on dumping non-plastic waste are outlined below. All discharge of garbage is prohibited in the Great Lakes or their connecting or tributary waters. Each knowing violation of these requirements may result in a fine up to \$500,000, and up to 6 years imprisonment.

| | | | |
|---|--|---|------------------------------------|
| 3 nautical miles from shore and anywhere in U.S. Lakes, Rivers, Bays, Sounds. | 3 to 12 nautical miles offshore | 12 to 25 nautical miles offshore | Outside 25 nautical miles offshore |
| ILLEGAL TO DUMP Plastic All other trash | ILLEGAL TO DUMP Plastic Dunnage, lining & packing materials that float. All other trash if not ground to less than one inch. | ILLEGAL TO DUMP Plastic Dunnage, lining & packing materials that float. | ILLEGAL TO DUMP Plastic |

State and local regulations may further restrict the disposal of garbage.

LET'S ALL DO OUR PART TO PROTECT THE OCEANS!

| MATTERS TO ADDRESS IN GARBAGE MANAGEMENT PLAN | |
|---|--|
| DESIGNATED PERSON IN CHARGE OF THE PLAN | <p>Identify designated person in charge of the plan This person should be assisted by the ship's crew</p> |
| PROCEDURES FOR COLLECTING GARBAGE | <p>Identify suitable receptacles for collection and separation (Separation of garbage is considered part of the collection process. Separation may take place at the source or at a separate designated station)</p> <p>Identify locations of receptacles</p> <p>Describe the process of how garbage is transported from the source of generation to the collection/separation stations;</p> <p>Describe how garbage is to be handled between primary collection/separation stations and other handling methods</p> <p>Describe the training/education programmes to facilitate collection of garbage and sorting of reusable/recyclable material</p> |
| PROCEDURES FOR PROCESSING GARBAGE | <p>Identify responsible personnel</p> <p>Identify locations of processing devices/stations</p> <p>Identify the categories of garbage that are to be processed</p> <p>Describe how reused/recyclable material is to be handled between primary processing stations and the storage/transfer stations</p> <p>Identify available processing devices/capacities</p> <p>Describe processing procedures used for reception facilities, storage and discharge into the sea (when permitted)</p> <p>Describe training/education programmes to facilitate processing of garbage and reuse/recycling</p> <p>Identify standard operating procedures for the operation and maintenance of the garbage management equipment</p> |
| PROCEDURES FOR STORING GARBAGE OR REUSABLE/RECYCLABLE MATERIAL | <p>Identify locations, the intended use and the capacities of available storage stations for each category of garbage or reusable/recyclable material</p> <p>Describe the condition of how the garbage will be stored (e.g. "food – frozen", "paper – compacted and should remain dry")</p> <p>Describe how garbage, incl. Reusable/recyclable material, is to be handled between storage locations and discharge</p> <p>Describe the training/education programmes to facilitate the storing of garbage and options for reuse/recycling</p> |
| PROCEDURES FOR DISCHARGING OF GARBAGE | <p>Describe the ship's procedures to ensure and demonstrate compliance with the requirements of the revised MARPOL Annex V for the discharge of garbage.</p> |

The implementation guidelines provide a generalized garbage management plan in the form of a scheme with options for ship-board handling, storing and discharge of ship-generated garbage (Figure 9; Figure 10).

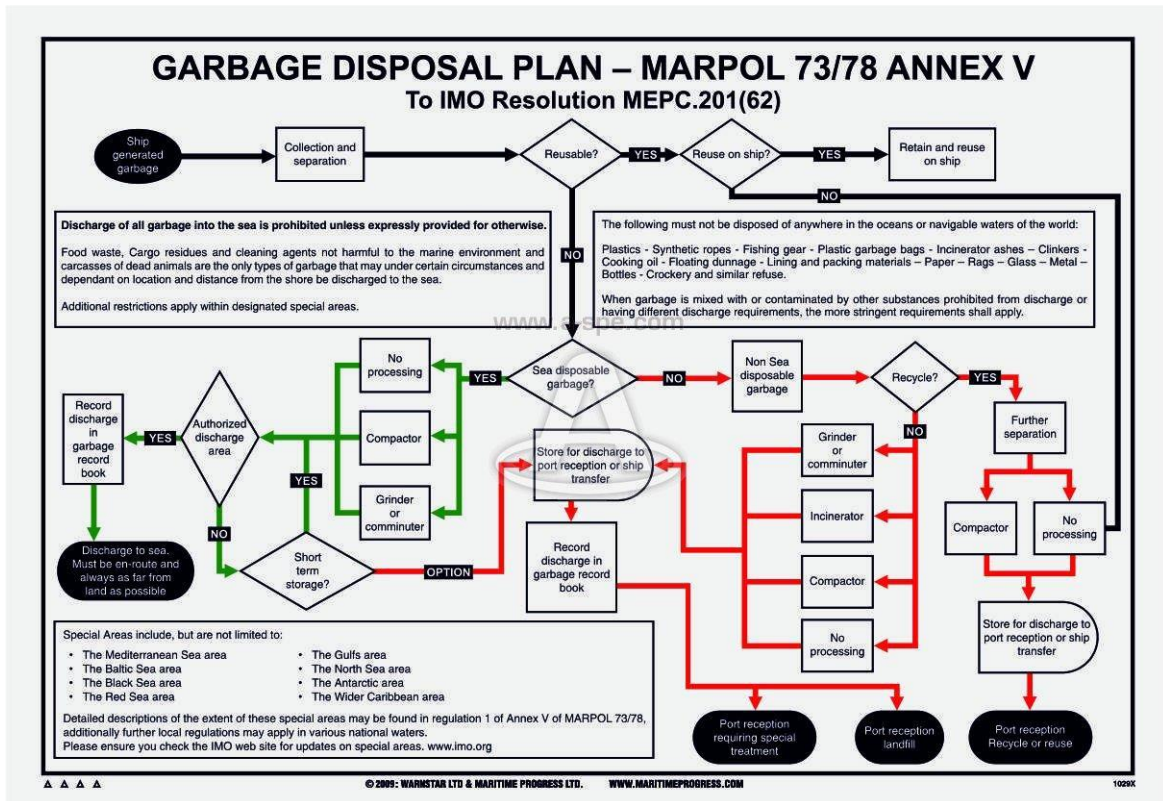


Figure 9: Scheme of a generalized garbage management plan (source www.a-spe.com).

HUDSON MARINE MANAGEMENT SERVICES AS

GARBAGE MANAGEMENT PLAN

General:

1. Policy on environmental protection is stated in the Company's ISM - Documentation where also supplementary information to this placard is found.
2. Continuous efforts to minimize garbage accumulation is a requirement and source reduction a target whenever requisitioning stores, provisions and also when considering garbage associated with various cargoes.
3. Possibilities for collecting recyclable garbage should always be evaluated.

MV HUDSON

Regulatory requirements:

Regulation 8(2) of Annex V of MARPOL 73/78 states that every ship of 400 gross tons and above, and every ship which is certified to carry 15 persons or more, shall carry a garbage management plan which the crew shall follow. Content of the plan as specified herein after.

Regulation 8(1a) of same Annex, requires every ship of 12 metres or more in length to display placards to notify the crew and passengers of the rules governing the disposal of garbage.

SPECIAL AREAS:
Regulation 1 of Annex V of MARPOL 73/78 states that a special area means a sea where special mandatory methods for the prevention of sea pollution by garbage is required. Special areas include those listed in Regulation 5 of Annex V of MARPOL 73/78 which is reproduced as follows:

- The Mediterranean Sea area
- The Baltic Sea area
- The Black Sea area
- The Red Sea area
- The Gulf area
- The North Sea area
- The Antarctic area
- The Wider Caribbean region

Boundary marks are specified in the above stated regulation.

SUMMARY OF GARBAGE DISPOSAL TO SEA

MATERIAL:
Plastics including synthetic ropes and fishing nets and plastic bags
Floating dunnage, lining and packing material
Paper, rags, glass, metal, bottles, crockery and similar refuse
Comminuted or ground garbage including paint, rag, glass, etc.
Food waste not comminuted or ground
Food waste comminuted or ground

When garbage is mixed with other harmful substances having different disposal or discharge requirements, the more stringent disposal requirements apply.

Processing the garbage:

COLLECTION / SEPARATION
The garbage is to be collected and separated in categories in accordance with the format for records of disposals as reproduced below:

1. Plastics
Containers marked and located on:.....POOP DECK AFT OF ACCOMMODATION
2. Floating dunnage, lining and packing materials
Containers marked and located on:.....FORCASTLE OR POOP DECK
3. Paper, rags, glass, metal, bottles, crockery and similar refuse
Containers marked and located on:.....POOP DECK AFT OF ACCOMMODATION
4. Comminuted or ground garbage including paper, rags, glass etc.
Containers marked and located on:.....POOP DECK AFT OF ACCOMMODATION
5. Food waste
Containers marked and located on:.....GALLEY AREA
6. Incinerator ashes
Containers marked and located on:.....POOP DECK AFT OF ACCOMMODATION

STORAGE/PREPARATION/DISPOSAL

FLOWCHART:

Garbage must be separated acc. to specified categories

```

graph TD
    A[Garbage must be separated acc. to specified categories] --> B[Ocean-disposable garbage]
    A --> C[Non ocean-disposable garbage]
    B --> B1[Non-processing]
    B --> B2[Grinder or comminuter]
    B --> B3[Compactor]
    C --> C1[Compactor]
    C --> C2[Grinder or comminuter]
    C --> C3[Non-processing]
    B1 --> B1a[Short term storage on board]
    B1 --> B1b[Disposal to sea in authorized discharge areas]
    B2 --> B2a[Disposal to sea in authorized discharge areas]
    B3 --> B3a[Disposal to sea in authorized discharge areas]
    C1 --> C1a[Disposal to sea in authorized discharge areas]
    C2 --> C2a[Disposal to sea in authorized discharge areas]
    C3 --> C3a[Disposal to sea in authorized discharge areas]
    C1 --> C1b[Long term storage on board]
    C1b --> C1b1[Port reception (special treatment or landfill)]
    
```

Discharge garbage ashore

Organisation:

ON BOARD SPILL RESPONSE ORGANISATION

```

graph TD
    Master[Master] --> SafetyOfficer[Safety Officer]
    Master --> SpillResponseOfficer[Spill Response Officer]
    Master --> TrainingOfficer[Training Officer]
    Master --> SafetyDelegates[Safety Delegates]
    SpillResponseOfficer --> GarbageManager[Garbage Manager]
    
```

Chief Officer is appointed as «Garbage Manager». He reports to the «Spill Response Officer» regarding all activities related to garbage handling, storage and disposal. He is also responsible for keeping the «Garbage Record Book».

As support for the «Garbage Manager», each department (deck, engine, catering) should appoint a person responsible for the collection and transport of garbage from local site to designated areas for further processing or storage.

RECORDING OF GARBAGE DISCHARGES

All garbage discharges, whether to sea / reception facilities ashore or to other ships, must be recorded in the vessel's Garbage Record Book. The book shall be submitted to the vessel's Master who shall sign each completed page.

The Master should obtain from the operator of port reception facilities, or from the Master of the ship receiving the garbage, a receipt or certificate specifying the estimated amount of garbage transferred. The receipt must be kept on board the ship with the Garbage Record Book for two years.

GARBAGE RECORD BOOK FORMAT

The Garbage Record Book format is specified in Appendix V to MARPOL 73/78 and ready made books may be obtained from suppliers of nautical publications.

| Date | Position of ship | Estimated amount (in m ³) | |
|------|------------------|---------------------------------------|------|
| | | Disch. | Rec. |
| | | | |
| | | | |
| | | | |
| | | | |

Reference to garbage categories as specified elsewhere on this plan.

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Figure 10: Example of a garbage management plan

☞ **The 2017 Guidelines for the Implementation of MARPOL Annex V, Sections 2.4 to 2.13 and Section 3) provide specific guidance for each of the garbage management phases.**

Garbage Management Phases Section 2 2017 Guidelines

| | |
|--|--------------|
| Collection | Section 2.4 |
| Processing | Section 2.5 |
| Storage | Section 2.6 |
| Discharge | Section 2.7 |
| Shipboard equipment for processing garbage | Section 2.8 |
| Grinding or comminution | Section 2.9 |
| Compaction | Section 2.10 |
| Incineration | Section 2.11 |
| Treatment of animal carcasses | Section 2.12 |
| Discharge of fish carried as cargo | Section 2.13 |

2.10.3. Garbage Record Book

The following vessels shall be provided with a Garbage Record Book

- all ships of 400 gross tonnage and above; and
- every ship which is certified to carry 15 persons or more engaged in voyages to ports and offshore terminals under the jurisdiction of another Party to the Convention; and
- every fixed or floating platform.

The Garbage Record Book, whether as a part of the ship's official logbook or otherwise, shall be in the form specified in appendix II to Annex V.

Entries in the Garbage record Book shall be made on each of the following occasions:

- when garbage is discharged to a reception facility;
- when garbage is incinerated;
- when garbage is discharged into the sea (in accordance with the requirements of MARPOL Annex V);
- accidental or other exceptional discharges or loss of garbage into the sea (in accordance with regulation 7).

The following information should be logged in and signed for:

- The master of the ship shall sign each completed page of the Garbage Record Book. The entries in the Garbage Record Book shall be at least in English, French or Spanish. Where the entries are also made in an official language of the State whose flag the ship is entitled to fly, the entries in that language shall prevail in case of a dispute or discrepancy;


- The entry for each discharge or incineration shall include date and time, position of the ship, categories of the garbage and the estimated amounts discharged or incinerated;
- The Garbage Record Book shall be kept on board the ship or the fixed or floating platform, and in such a place as to be readily available for inspection at all reasonable times. This document shall be preserved for a period of at least two years from the date of the last entry made in it;
- In the event of any discharge or accidental loss referred to in regulation 7 of this Annex an entry shall be made in the Garbage Record Book, or in the case of any ship of less than 400 gross tonnage, an entry shall be made in the ship's official log-book, of the date and time of occurrence, port or position of the ship at time of occurrence (latitude, longitude and water depth if known) the reason for the discharge or loss, details of the items discharged or lost, categories of garbage discharged or lost, estimated amount for each category in cubic metres, reasonable precautions taken to prevent or minimize such discharge or accidental loss and general remarks.

The amount of garbage on board should be estimated in cubic metres, if possible separately according to category. The Garbage Record Book contains many references to estimated amount of garbage. It is recognized that the accuracy of estimating amounts of garbage is left to interpretation. Volume estimates will differ before and after processing. Some processing procedures may not allow for a usable estimate of volume, e.g., the continuous processing of food waste. Such factors should be taken into consideration when making and interpreting entries made in a record.

The Garbage Record Book must be kept for a period of two years after the date of the last entry. This regulation does not in itself impose stricter requirements - but it makes it easier to check that the regulations on garbage are being adhered to as it means ship personnel must keep track of the garbage and what happens to it. It may also prove an advantage to a ship when local officials are checking the origin of discharged garbage - if ship personnel can adequately account for all their garbage, they are unlikely to be wrongly penalised for discharging garbage when they have not done so.

2.11. Management of cargo residues of solid bulk cargoes

The discharge of cargo residues was one of the specific issues addressed during the review of MARPOL Annex V.

 **Cargo residues are considered as being garbage (according to regulation 1.9 of MARPOL Annex V) and defined in regulation 1.2 as the remnants of any cargo which are not covered by other Annexes to MARPOL, and which remain on deck or in holds following loading or unloading.**

They include loading and unloading excess or spillage, whether in wet or dry condition or entrained in wash water, but do not include cargo dust remaining on deck after sweeping or dust on the external surfaces of the ship.

In addition to this definition, the revised Annex V also stipulates that only those cargo residues that cannot be recovered using commonly available methods for unloading shall be

considered for discharge. Cargo residues may be discharged in accordance with regulations 4.1.4 and 6.1.2. However, cargo material contained in the cargo hold bilge water should not be treated as cargo residues if the cargo material is not harmful to the marine environment and the bilge water is discharged from a loaded hold through the ship's fixed piping bilge drainage system.

Solid bulk cargoes as defined in regulation VI/1-1.2 of SOLAS, other than grain, shall be classified in accordance with appendix I of MARPOL Annex V, and declared by the shipper as to whether or not they are harmful to the marine environment.

☞ As a general rule, cargo residues which contain substances classified as harmful to the marine environment (HME) must not be discharged at sea, but have to be taken to port reception facilities.

Regarding the discharge of cargo residues which do not contain any substances classified as harmful to the marine environment, the revised MARPOL Annex V establishes different requirements depending on whether they are contained in wash water or not.

Cargo residues are considered harmful to the marine environment (HME) and subject to regulations 4.1.4 and 6.1.2.1 of the revised MARPOL Annex V if they are residues of solid bulk substances which are classified according to the criteria of the United Nations Globally Harmonized System for Classification and Labelling of Chemicals (GHS) meeting the parameters listed below. The criteria are based on UN GHS, fourth revised edition (2011). For specific products (e.g. metals and inorganic metal compounds) guidance available in UN GHS, annexes 9 and 10 are essential for proper interpretation of the criteria and classification and should be followed:

- Acute Aquatic Toxicity Category 1; and/or
- Chronic Aquatic Toxicity Category 1 or 2; and/or
- Carcinogenicity Category 1A or 1B combined with not being rapidly degradable and having high bioaccumulation; and/or
- Mutagenicity Category 1A or 1B combined with not being rapidly degradable and having high bioaccumulation; and/or
- Reproductive Toxicity Category 1A or 1B combined with not being rapidly degradable and having high bioaccumulation; and/or
- Specific Target Organ Toxicity Repeated Exposure Category 1 combined with not being rapidly degradable and having high bioaccumulation; and/or
- Solid bulk cargoes containing or consisting of synthetic polymers, rubber, plastics, or plastic feedstock pellets (this includes materials that are shredded, milled, chopped or macerated or similar materials).

Solid bulk cargoes as defined in regulation VI/1-1.2 of SOLAS, other than grain, shall be classified in accordance with appendix I of MARPOL Annex V, and declared by the shipper as to whether or not they are harmful to the marine environment. For ships engaged in international voyages, reference is made to section 4.2.3 of the International Maritime Solid Bulk Cargoes (IMSBC) Code; for ships not engaged in international voyages, other means of declaration may be used, as determined by the Administration. Examples of cargo residues that might be considered as harmful to the marine environment are washing waters containing metal concentrates (e.g. lead, zinc, copper, nickel concentrates, bauxite). Figure 11 illustrates how to gather data required for HME classification.

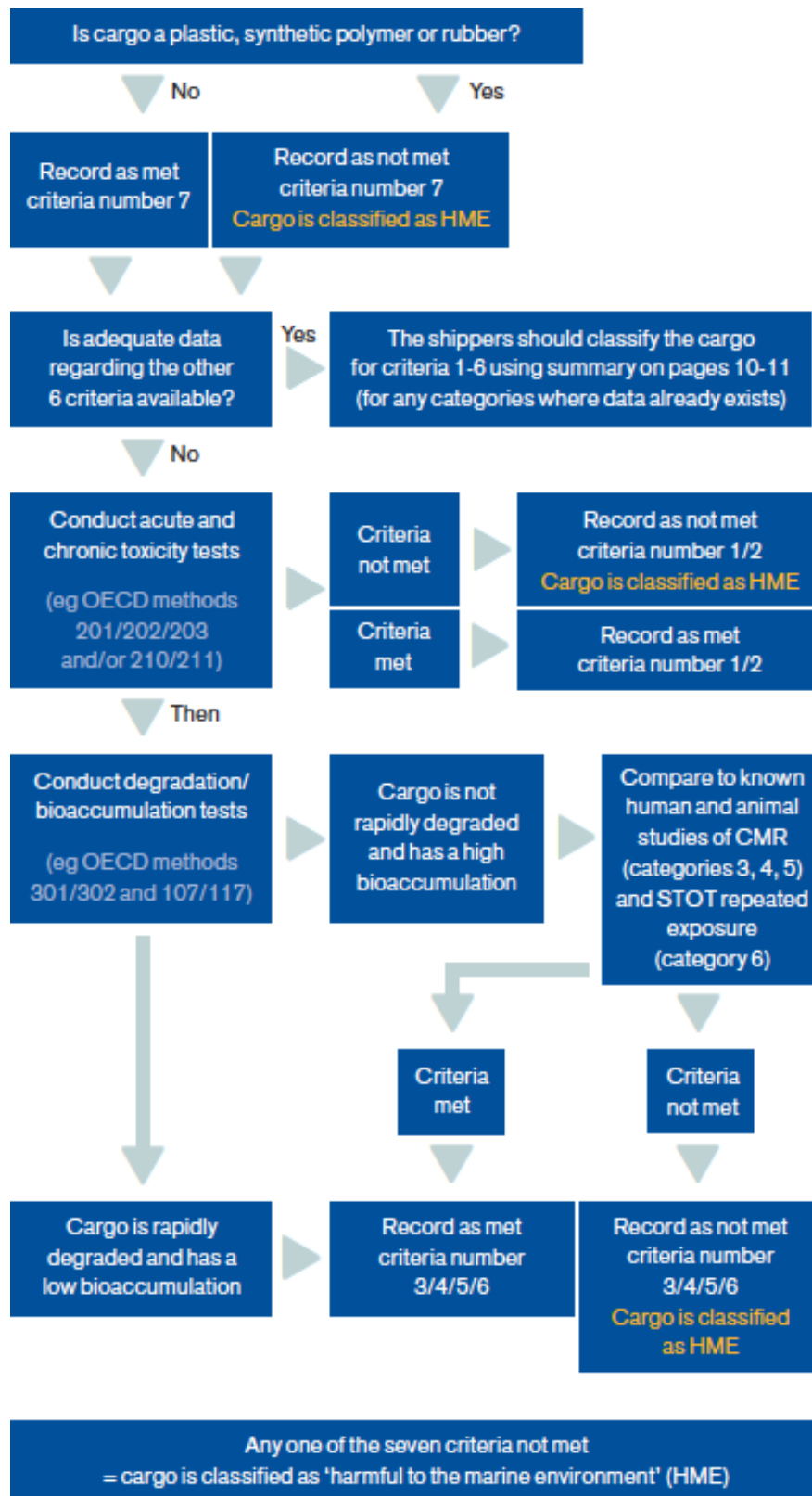


Figure 11: Data required for harmful to marine environment (HME) classification. (Source: UK P&I Club)

- ☞ **Ports, terminals and ship operators should consider cargo loading, unloading and onboard handling practices in order to minimize production of cargo residues.**

Cargo residues are created through inefficiencies in loading, unloading, onboard handling. Options that should be considered to decrease the amount of such garbage include the following:

- ensuring ships are suitable to carry the intended cargo and also suitable for unloading the same cargo using conventional unloading methods;
- unloading cargo as efficiently as possible, utilizing all appropriate safety precautions to prevent injury or ship and equipment damage and to avoid or minimize cargo residues; and
- minimizing spillage of the cargo during transfer operations by carefully controlling cargo transfer operations, both on board and from dockside. This should include effective measures to enable immediate communications between relevant ship and shore-based personnel during the transfer operations and when feasible, enclosure of conveyance devices such as conveyor belts. Since this spillage typically occurs in port, it should be completely cleaned up immediately following the loading and unloading event and handled as cargo; delivering it into the intended cargo space or into the appropriate unloading holding area.

When the master, based on the information received from the relevant port authorities, determines that there are no adequate reception facilities (IMO Circular MEPC.1/Circ.834/Rev.1, Consolidated Guidance for Port Reception Facility providers and users, Appendix 1: “Format for Reporting Alleged Inadequacies of Port Reception Facilities”.) at either the port of departure or the port of destination in the case where both ports are situated within the same special area, the condition under regulation 6.1.2.5 should be considered satisfied.

3. Verification of compliance with the provisions of Annex V

In order to ensure that the measures provided by MARPOL are given full and complete effect, States are responsible for taking all the steps necessary to fully implement and enforce the laws and regulations, and that they have in place an adequate and effective system to exercise control.

In 2013 the IMO adopted the “IMO Instruments Implementation Code (III Code)”. The main objective of this III Code is to enhance global maritime safety and protection of the marine environment and assist States in the implementation of IMO instruments to which these States are a Contracting Government or Party.

The IMO has also adopted amendments (Resolutions MEPC.246(66) and MEPC.247(66)) to the MARPOL Annexes I, II, II, IV, V and VI in order to make use of the III Code mandatory.

3.1. Regulation 11

According to regulation 11 (application) of MARPOL Annex V, Parties shall use the provisions of the III Code to ensure the execution of their obligations and responsibilities contained in MARPOL Annex V.

3.2. Regulation 12

Furthermore, according to regulation 12 each Party shall be subject to periodic audits by the Organization in accordance with the audit standard to verify compliance with and implementation of this Annex. The audit scheme will be administered by the IMO Secretary-General, based on the guidelines developed by the IMO. Every Party shall have responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings, based on the guidelines developed by the IMO. Audit of all Parties shall be:

- .1 based on an overall schedule developed by the IMO Secretary-General, taking into account the guidelines developed by the IMO; and
- .2 conducted at periodic intervals, taking into account the guidelines developed by the IMO.

4. International Code for Ships Operating in Polar Waters

Due to the need for a mandatory framework to address the additional demands that have been put on ships operating in polar waters, the IMO adopted in May 2015 the International Code for Ships Operating in Polar Waters (Polar Code; Resolution MEPC.264(68)). In order to make the environment-related provisions of the Polar Code mandatory, IMO adopted amendments to the MARPOL Annexes I, II, IV and V.

For MARPOL Annex V specific references have been added in regulation 3 (general discharge prohibition) and regulation 7 (exceptions) for ships operating in polar waters, but also a new chapter has been inserted.

4.1. Regulation 13: Definitions

In regulation 13 (definitions) reference has been made to the Polar Code, Arctic waters and polar waters, while regulation 14 (application and requirements) provides to which ships these specific requirements apply, namely “all ships to which this Annex applies, operating in polar waters”.

4.2. Regulation 14: Application and Requirements

Chapter 3 applies to all ships to which Annex V applies operating in polar waters. Unless expressly provided otherwise, any ship to which Annex V applies, shall comply with the environment-related provisions of the introduction and with chapter 5 of part II – A of the Polar Code, in addition to any other applicable requirements of Annex V. In applying chapter 5 of part II – A of the Polar Code, consideration should be given to the additional guidance in part II -B of the Polar Code.

5. References and Other Sources of Information

Information on sources and impact of marine debris on United States Environmental Protection Agency website: <http://water.epa.gov/type/oceb/marinedebris/moreinfo.cfm>

United Nations Environmental Programme (UNEP) website about marine litter: <http://www.unep.org/regionalseas/marinelitter/about/default.asp>

Review of the current state of knowledge regarding marine litter in wastes dumped at sea under the London Convention and Protocol. Published in 2016 by the Office for the London Convention/Protocol and Ocean Affairs. Available at: <http://www.imo.org/en/MediaCentre/MeetingSummaries/LCLP/Pages/LC-38-LP-11.aspx>

OSPAR Commission, 2009: "Assessment of the impacts of shipping on the marine environment". Available at: http://qsr2010.ospar.org/media/assessments/p00440_Shipping_Assessment.pdf

Website about the issue of ghost fishing: www.ghostfishing.org

Kühn, S. Bravo Rebolledo E.L. & Van Franeker, J.A. 2015. Deleterious effects of litter on marine life. pp 75-116 In: Bergmann, M., Gutow, L., and Klages, M. (eds). Marine Anthropogenic Litter. Springer, Berlin.

Vlachogianni, Th., Anastasopoulou, A., Fortibuoni, T., Ronchi, F., Zeri, Ch., 2017. Marine Litter Assessment in the Adriatic and Ionian Seas. IPA-Adriatic DeFishGear Project, MIO-ECSDE, HCMR and ISPRA. pp. 168 (ISBN: 978-960-6793-25-7)

Veiga, J.M., Fleet, D., Kinsey, S., Nilsson, P., Vlachogianni, T., Werner, S., Galgani, F., Thompson, R.C., Dagevos, J., Gago, J., Sobral, P. and Cronin, R.; 2016; Identifying Sources of Marine Litter. MSFD GES TG Marine Litter Thematic Report; JRC Technical Report; EUR 28309; doi:10.2788/018068

Information about segregation of galley waste, UK P&I Club: <http://www.ukpandi.com/knowledge/article/431-09-05-galley-garbage-segregation-worldwide-1730/>

Seas At Risk website on marine litter: <http://www.seas-at-risk.org/n2.php?page=489>

United States National Oceanic and Agricultural Agency (NOAA) marine debris program: <http://marinedebris.noaa.gov/about-us>

United States National Oceanic and Agricultural Agency (NOAA) economic study shows marine debris costs California residents millions of dollars:

<http://marinedebris.noaa.gov/research/new-economic-study-shows-marine-debris-costs-california-residents-millions-dollars>

The Ocean Health Index is a collaborative effort, made possible through contributions from more than 65 scientists/ocean experts and partnerships between organizations. The Index calculates an annual global score that assesses the condition of marine ecosystems. Website available at: <http://www.oceanhealthindex.org/>

The World Ocean Review series are comprehensive reports about the state of the world's oceans and their interplay with ecological, economic and socio-political conditions. Its

aim is to increase public awareness of the interconnected nature of the diverse aspects of the marine environment and thus to boost marine conservation. Information about marine litter available at: <http://worldoceanreview.com/en/wor-1/pollution/litter/>

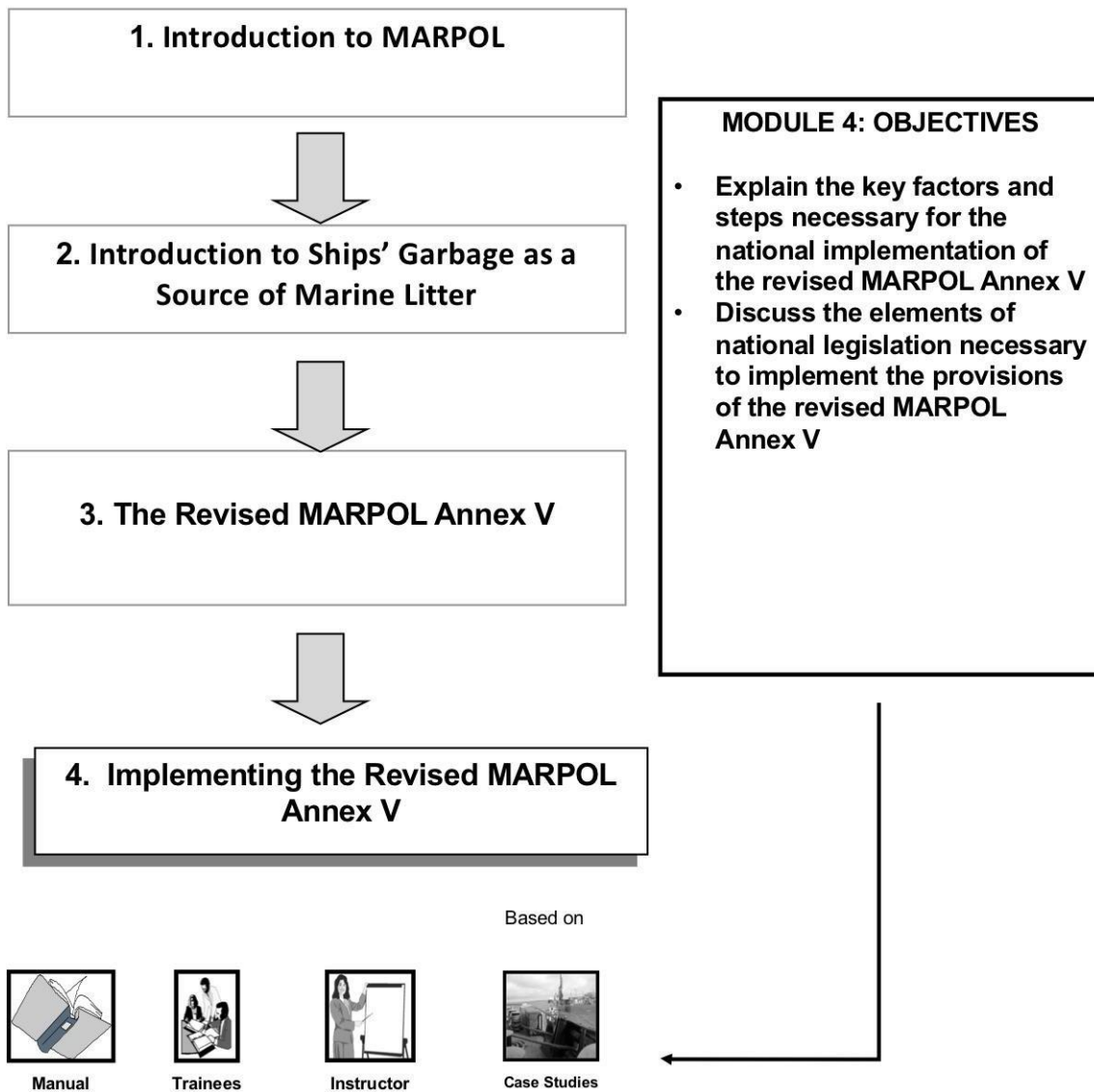
ISO Standard ISO 21070 (2011) on Ships and marine technology - Marine environment protection - Management and handling of shipboard garbage. More information available at: http://www.iso.org/iso/catalogue_detail.htm?csnumber=51003

Information about how to gather data required for the classification as substances Harmful to the Marine Environment (HME), UK P&I Club: <http://www.ukpandi.com/fileadmin/uploads/uk-pi/LP%20Documents/MARPOL%20Annex%20V%20-%20Checklist%20Updated.pdf>

UK P&I Club) (<http://www.ukpandi.com/fileadmin/uploads/uk-pi/LP%20Documents/MARPOL%20Annex%20V%20-%20Checklist%20Updated.pdf>).

MEPSEAS Training Course on the Legal Implementation of the Revised MARPOL Annex V

4



Module Aims & Objectives of Module 4

This Module aims to provide an overall framework leading to the full implementation of the revised MARPOL Annex V. At the end of the module the participants will be expected to:

- Explain the key factors and steps necessary for the national implementation of the revised MARPOL Annex V ; and
- Discuss the elements of national legislation necessary to implement the provisions of the revised MARPOL Annex V

The Module is divided into two parts, namely:

1. Implementing the revised MARPOL Annex V
2. Elements of drafting national legislation for the prevention of pollution by garbage from ships

Table of Content Module 4

| | |
|---|-----------|
| 1. Background | 75 |
| 2. Implementing the revised MARPOL Annex V: key factors | 77 |
| 2.1. Legal system | 78 |
| 2.1.1. The dualistic method (incorporation by re- enactment): | 78 |
| 2.1.2. The monistic method (incorporation by reference) | 78 |
| 2.2. Is there sufficient existing legislation or is new legislation needed? | 78 |
| 2.3. Deciding the Nature of Proposed Legislation | 78 |
| 3. Action Plan to draft national MARPOL Annex V legislation..... | 80 |
| 4. Guide to drafting national legislation to implement the revised Annex V..... | 81 |
| 5. Elements of Drafting National Legislation for the Prevention of Pollution by Garbage from Ships | 83 |
| 5.1. Short title | 83 |
| 5.2. Long title | 83 |
| 5.3. Definitions | 83 |
| 5.4. Objectives..... | 83 |
| 5.5. Application | 83 |
| 5.6. General prohibition on discharge of garbage into the sea | 84 |
| 5.7. Discharge of garbage..... | 84 |
| 5.8. Reception facilities | 84 |
| 5.9. Placards, garbage management plans and garbage record keeping | 85 |
| 5.10. Inspection, detention, penalties..... | 85 |
| 6. Tools to enhance implementation..... | 86 |
| 6.1. III Code | 86 |
| 6.2. 2017 Guidelines for implementation of MARPOL Annex V | 86 |
| 6.3. Port State MOUs | 86 |
| 6.4. Training and information for crew and stakeholders..... | 87 |
| 6.5. Reporting schemes and data dissemination..... | 87 |
| 6.6. Verification of compliance | 87 |
| 7. References and Other Sources of Information | 87 |

1. Background

Countries that are Parties to international conventions have a general duty to implement and enforce conventions.

In order to enforce the provisions of MARPOL, a country who is a Party to the convention must give full effect to the provisions under national law. This includes drafting and adopting regulations in respect of all the technical Annexes to which the State is bound, and the incorporation of a framework of sanctions against violations within the jurisdiction of a State Party.

Key actions which any State Party to MARPOL may undertake in order to comply with the requirements of the Convention, are:

- Accede to MARPOL;
- Give effect to Annexes I and II;
- Give effect to the other Annexes accepted or given force by national law;
- Prohibit violations;
- Provide sanctions;
- Take proceedings;
- Inform Parties concerned;
- Inform IMO;
- Inspect ships;
- Monitor compliance;
- Avoid undue delay to ships;
- Report on incidents;
- Provide IMO with documents;
- Investigate casualties involving pollution and report findings;
- Ensure provision of adequate reception facilities.

The specific rights and obligations of states Parties depend on the country's role as flag state, port state and or coastal state.

Broadly speaking flag states must implement and enforce the provisions of the revised MARPOL Annex V by transposing its requirements into national law, by prohibiting violations and prescribing sanctions and by taking proceedings where necessary. Flag states must also govern national flagged ships by inspection and certification as well as mandating the use of placards, a Garbage Management Plan and Garbage Record Book as applicable as well as record keeping. Other flag state duties include giving notice and advice to stakeholders, i.e. shipowners, shippers, crew on MARPOL requirements, the submission of reportorial requirements as well as the training of pertinent officers, (ship inspectors, enforcement officers, crew) and the supervision of Recognised Organisations (ROs).

Port State Control (PSC) includes the control over foreign flagged-ships on the State's waters, the training of Port State Control officers (PSCOs) and providing information to States (flag and port states) as necessary and record keeping where necessary. Strict guidance and procedures have been developed by the IMO for the conduct of PSC in an attempt to unify the application of PSC provisions contained in a number of treaties including MARPOL.

Coastal States must take the necessary measures by establishing and implementing policies that assist in the implementation and enforcement of the provisions of MARPOL. Coastal State control also requires providing necessary services and infrastructure for safety of navigation and security and must ensure the provision of port reception facilities.

Common obligations include:

- establish and maintain legible records for easy retrieval;
- rigorous and effective application and enforcement of national legislation and monitoring of compliance;
- stimulate a safety culture;
- prompt action to identify and rectify non-compliance;
- close supervision of ROs;
- regular evaluation and review of effectiveness of enforcement.

MARPOL Annex V entered into force on 31 December 1988 with amendments adopted by resolution MEPC. 201(62) in 2011, resulting in a totally revised Annex V based on the principle of a total prohibition of the discharge of garbage, which entered into force in March 2013. In order to make the latest amendments and resolutions enforceable, Parties countries must incorporate these amendments into their national legislation. A complete list of amendments to MARPOL Annex V is provided in Table 6 below.

Table 6: List of amendments to MARPOL Annex V

| No. | Resolution | Adoption | Deemed acceptance | Entry into force |
|-----|---------------------------|---------------|-------------------|------------------|
| 1 | MEPC.36(28) | 17 Oct. 1989 | 17 Aug. 1990 | 18 Feb. 1991 |
| 2 | MEPC.42(30) | 16 Nov. 1990 | 16 Sept. 1991 | 17 Mar. 1992 |
| 3 | MEPC.48(31) | 4 Jul. 1991 | 4 Oct. 1992 | 4 Apr. 1993 |
| 4 | Resolution 3 ³ | 2 Nov. 1994 | 3 Sept. 1995 | 3 Mar. 1996 |
| 5 | MEPC.65(37) | 14 Sept. 1995 | 1 Jan. 1997 | 1 Jul. 1997 |
| 6 | MEPC.89(45) | 5 Oct. 2000 | 1 Sept. 2001 | 1 Mar. 2002 |
| 7 | MEPC.116(51) | 1 April 2004 | 1 Feb. 2005 | 1 Aug. 2005 |
| 8 | MEPC.201(62) | 15 Jul. 2011 | 1 July. 2012 | 1 Jan. 2013 |
| 9 | MEPC.216(63) | 2 Mar. 2012 | 1 Feb. 2013 | 1 Aug. 2013 |

| | | | | |
|----|--------------|--------------|--------------|-------------|
| 10 | MEPC.246(66) | 4 Apr. 2014 | 1 Jul. 2015 | 1 Jan. 2016 |
| 11 | MEPC.265(68) | 15 May 2015 | 1 Jul. 2016 | 1 Jan. 2017 |
| 12 | MEPC.277(70) | 28 Oct. 2016 | 1 Sept. 2017 | 1 Mar. 2018 |

EXAMPLE

Several countries already have existing legislation which incorporated MARPOL Annex V into national legislation. Malaysia for instance ratified MARPOL Annex V and has 15 ports that have reception facilities for garbage waste (sources: Cobsea.org and MPA.gov.sg). South Africa has the Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986.

While Vietnam has some general regulations to incorporate MARPOL 73/78 it does not have specific regulations dealing with the prevention of pollution by garbage, as well as other sources of pollution from ships (Nguyen Van Truong, 2009). For instance, Chapter V of Law on Environmental Protection 2014 has some general MARPOL Regulations (National Assembly of Vietnam. Law No.55/2014/QH13. Law on Environmental Protection, 2015 available at <http://www.moj.gov.vn/>) while Decision No.795/QĐ-TTg and Decision No. 1517/QĐ-TTg contains some relevant provisions.

2. Implementing the revised MARPOL Annex V: key factors

The national legislative frameworks of countries often differ significantly. This includes the constitutional structure, the system of national laws, various policies and strategies as well as bylaws. It is therefore important to understand the legal system as well as the legislative processes of a country. A number of factors determine the nature of legislative, regulatory, administrative and policy measures necessary to incorporate MARPOL Annex V into national legislation, or to amend existing legislation. These factors include the following:

- whether there is existing national legislation capable of amendment, or whether completely new legislation is required
- whether the country wishes to develop legislation solely for implementation of MARPOL Annex V or also to cover obligations under other international or regional treaties
- the legal tradition of the country, e.g. common law or civil law, the mode of incorporation of treaties into national law
- whether the country has significant flag, port and coastal interests
-

This module looks at the key factors and steps that must be considered when developing national legislation and it provides guidance during the drafting process

2.1. Legal system

The manner in which treaties are generally incorporated into national law depends on the legal system of a particular country. A country's legal system is governed by its constitutional or supreme law and two approaches exist that can be used to incorporate international law into national law; the dualistic method and the monistic method. It is therefore important for each State party to incorporate international treaties into national legislation in accordance with its constitution.

2.1.1. The dualistic method:

International law and national law are viewed as two separate legal systems. According to the dualistic method treaties do not automatically become part of the law of a country once a country ratified or acceded to it but rather by explicit national legislative action. This means a country must draft specific domestic legislation that will establish institutional, administrative and penal measures necessary to give effect to the treaty in national law. Cambodia is an example of a country that follows the dualist approach (Konrad-Adenauer- Stiftung Cambodian Constitutional Law (2016) at 79. In fact, all the MEPSEAS countries follow a dualistic system and there is need for legislation to implement the requirements of a treaty to which they have become parties.

2.1.2. The monistic method:

International law and national law are viewed as one legal system. According to the monistic method treaties automatically become part of the law of country once a country accedes thereto, once the treaty has entered into force, and has been published in an official gazette.

2.2. Is there sufficient existing legislation or is new legislation needed?

Careful consideration should first be given to whether primary legislation is actually needed to implement MARPOL Annex V or whether a Cabinet decision or ministerial directive would be sufficient. This may avoid having to engage the limited resources of the department responsible for drafting legislation and the use of Parliament's time to debate the legislation.

It is possible for the regulation-making authority including for example the Department of Environmental Affairs, or any other national department that administrates matters relating to environmental issues and/or protection of the marine environment. to incorporate the provisions of MARPOL Annex V into existing legislation by adopting a set of regulations dealing with prevention of pollution by garbage from ships.

2.3. Deciding the Nature of Proposed Legislation

Once it has been decided that new legislation is needed, the next step is to determine how the legislation is to be packaged. Broadly speaking the following possibilities can be considered:

- According to the practice in some jurisdictions, it would be sufficient to enact or promulgate a brief piece of enabling legislation simply stating that the revised MARPOL Annex V has the force of law and appending the whole Annex V as a Schedule.

However, attention needs to be paid to clauses requiring parties to take action. These need to be implemented and national lawyers and drafters need to think how and at which level of the legislation (primary and/or subsidiary) to implement them.

- Some countries may wish to integrate Annex V into existing legislation covering safety of maritime transport or the protection of the environment, for example by amending the Merchant Shipping Act, the Biodiversity Act, Maritime Code etc, and/or by adopting regulations under existing legislation.

☞ **Singapore promulgated the Prevention of Pollution of the Sea (Garbage) regulations under the Prevention of Pollution of the Sea Act**

- In other countries it will be necessary to draft new stand- alone legislation to incorporate the provisions of MARPOL Annex V. This legislation should include a provision authorising the publishing of related regulations when necessary.

☞ **Countries are advised to look at how other international maritime conventions have been implemented e.g. SOLAS, MARPOL etc.**

| | |
|----------------|--|
| EXAMPLE | MEPSEAS COUNTRIES |
| | <ul style="list-style-type: none"> ● Indonesia and Malaysia: Existing legislation allows these two countries to implement the BWM Convention and Anti-Fouling Systems Convention as the coverage of these two conventions fall within the general application on marine environment protection. <ul style="list-style-type: none"> ○ Indonesia: Existing laws and a Presidential Proclamation are sufficient for the implementation of the revised Annex V, thus they now focus on the drafting of the implementing regulations, i.e. no need to go to the Parliament. ○ Malaysia is looking at an existing legislation, MSO 1952 and the crafting of an Ocean Policy as the possible basis for implementing the priority conventions. ● Cambodia needs to go to Parliament for the enactment of a law to implement international conventions. There is no maritime law that has been passed in Cambodia. ● Myanmar, Philippines, Thailand and Vietnam need to draft legislation for implementing international conventions. |

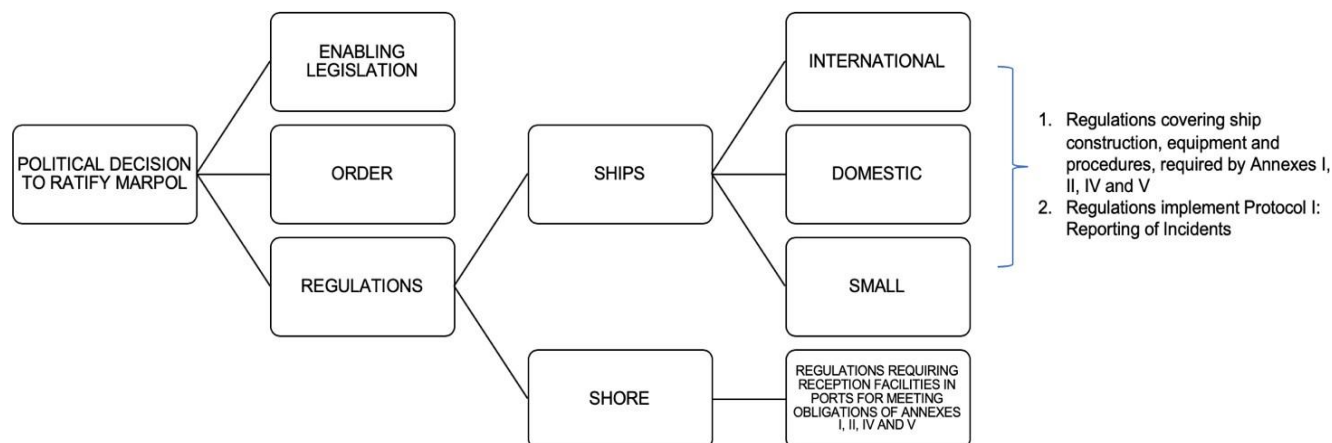


Figure 12: Legal actions necessary for integrating MARPOL into national law and for its implementation

3. Action Plan to draft national MARPOL Annex V legislation

It is important to note that the Annexes to MARPOL are living documents that develop through time and that guidelines and resolutions must be considered at all times. The first step will be to develop a policy and a strategy to either accede to MARPOL Annex V, or where a country is already a party to MARPOL Annex V, to implement it and implement the amendment. Thereafter the most important steps include:

- Determine the relevant national departments responsible for the implementation of MARPOL Annex V

☞ In Singapore the relevant authority is the Maritime and Port Authority of Singapore as established under the Maritime and Port Authority of Singapore Act, while the Director of Marine as appointed by the Merchant Shipping Act has enforcement powers under the Prevention of Pollution of the Sea Act.

- It is advisable to establish a National Task Force, if one is not already in place, with a National Lead Agency, for example the maritime authority of the country, with the responsibility for implementing the provisions of MARPOL Annex V. Other relevant ministries/departments could include ports, shipping and environment.

- The national taskforce will assist with the national drafting process of the legislation.
- The national taskforce can consist out of the responsible maritime authority, other national departments, legal and technical experts. It is further advisable that the national task force meets regularly to report on the drafting process and to present the work to be underdone to all interested stakeholders. This provides stakeholders to give input to drafting process from the beginning.
- The Port Authority as well as other relevant departments and agencies should form part of the task force.
- Establishing a roster of experts is useful, with particular focus on experts with technical expertise as well as legal drafting experts, who can form part of the task force.
- Once established the task force can allocate specific tasks to its members. For instance, the legal expert can conduct an inventory of existing legislation.
- It is advisable for the task force to meet regularly to update on the progress made and to get input from all relevant stakeholders. The next step will be to draft the legislation, either by means of amendment to existing legislation or the drafting of new legislation, or drafting of regulations.
- Making use of model legislation that has been prepared for implementing MARPOL Annex V into national law.
- **Important documents to consider during this process:**
 - **The Revised MARPOL Annex V**
 - **All IMO guidelines**
 - **All MEPC resolutions**
 - **All relevant IMO publications**
 - **The draft MARPOL Annex V Regulations**
 - **The MEPSEAS Training Course modules**

4. Guide to drafting national legislation to implement the revised Annex V

The regulations that compose the MARPOL annexes, including Annex V can to a large extent be reproduced as national regulation with very minor changes. Some of the regulations are, however, directed to the State itself, and these are not suitable for straightforward reproduction in national regulations.

☞ **Regulation 2. It will be necessary to change this regulation so that application is only to ships over which a State has jurisdiction (i.e, its own flag ships and others when they are in its waters).**

☞ **Regulation 8: This regulation relates to the provision of reception facilities and requires the Government of each Party**

to ensure their provisions. They are not, therefore, suitable as part of national regulations applying to ships

EXAMPLE

Example of regulations for the provision of reception facilities (source MARPOL HOW TO DO IT (IMO) 2013)

The [.....], in exercise of the powers conferred by [the enabling legislation or Order reference, hereby makes the following regulations:

1. Commencement and definitions

- 1.1. These regulations shall come into force on
- 1.2. For the purpose of these regulations , (definitions)

2. Application

- 2.1. These regulations apply to every port (defined to include port, estuary, haven, dock) authority or terminal operator of a port or terminal in [State]

3. Requirement to provide adequate reception facilities

- 3.1. The powers exercisable by a port authority or terminal operator in [State] shall include the power to provide reception facilities for:
 - 3.1.1. Residues or mixtures which contain oil or noxious liquid substances
 - 3.1.2. Sewage
 - 3.1.3. Garbage
 - 3.1.4. ozone – depleting substances and equipment containing such substances when removed from ships
 - 3.1.5. exhaust gas cleaning residues from exhaust gas cleaning systems from ships using the port or terminal.
- 3.2. Any power of a port authority or terminal operator to provide such reception facilities shall include powers to join with any other person in providing them (waste disposal authorities, contractors, oil industry etc,)
- 3.3. A port authority in respect of its port or a terminal operator in respect of its terminal shall ensure that:
 - 3.3.1. If the port or terminal has reception facilities, those facilities are adequate, or
 - 3.3.2. If the port of terminal has no such facilities, adequate facilities are provided.
- 3.4. A port authority or terminal operator shall provide the [e.g., Department of Transport.....] with such information as it requires in respect of any reception facilities provided as its port or terminal.

4. Direction to provide adequate facilities

- 4.1. Where it appears to the [e.g., Department of Transport...]
 - 4.1.1. That the port or terminal has no reception facilities for (oil, noxious liquid substances, sewage, garbage, ozone - depleting substances or equipment containing such substances from ships; or
 - 4.1.2. If the port or terminal has such reception facilities, that those facilities are not adequate: the [e.g., Department of Transport] may direct the port authority or terminal operator to provide, or arrange for the provision of, such facilities as may be specified in the direction.

5. Use of reception facilities

- 5.1. A port authority or terminal operator or a person providing reception facilities may make a reasonable charge for the use of those facilities and may impose reasonable conditions in respect of the use thereof.
- 5.2. Any such reception facilities shall be open to all ships which, in the opinion of the port or terminal operator, are using the port or terminal for a primary purpose other than utilizing the reception facilities.

6. Penalties

Any port authority or terminal operator which fails to comply with any direction given under regulation 4 within the period specified

5. Elements of Drafting National Legislation for the Prevention of Pollution by Garbage from Ships

5.1. Short title

The title of legislation will vary depending on the form of the regulatory instrument chosen, e.g., whether it is stand-alone legislation or an amendment to, or regulation affiliated with, existing legislation. The title will also depend on legislative drafting protocols in each country. A title used for legislation that is not part of existing legislation should indicate the general scope, that is, what is covered, by the legislation, for example the Regulations for the Prevention of Pollution by Garbage from Ships of Country X, or the Country X Prevention of Pollution by Garbage from Ships Act.

5.2. Long title

The long title of an Act almost reads like a short description of the Act and it explains the purpose of the Act. For example, in Singapore the relevant regulations are called the Prevention of Pollution of the Sea (Garbage) Regulations.

5.3. Definitions

Definitions constitute an important part of legislation because they precisely define the scope of the legislation and terminology within the legislation, e.g., who does it apply to and what object or activity does it apply to. Regulation 1 of MARPOL Annex V contains a number of definitions. A country can also choose to include or exclude terminology that is specific to national circumstances, the list of definitions contained in MARPOL Annex V is therefore not exhaustive.

5.4. Objectives

This part of legislation clearly stipulates the objectives of the specific Act or regulations and should include the country's commitment to give effect to the provisions thereof in reference to the country's obligations in terms of the international instrument which it is incorporating into national legislation.

5.5. Application

An application provision clearly sets out who the provisions of the legislation shall apply to and whom it shall not apply to. The application section typically follows the definition and objectives section of the legislation. In the instance of MARPOL Annex V Regulation 2 determines that unless expressly provided otherwise, the provisions of the Annex shall apply to all ships.

| | |
|----------------|---|
| EXAMPLE | In Singapore the application regulation is drafted as follows: |
| | <p>These Regulations shall apply to —</p> <p>(a) Singapore ships wherever they may be; and</p> <p>(b) other ships while they are in Singapore waters.</p> |

5.6. General prohibition on discharge of garbage into the sea

This regulation places a general prohibition on discharge of garbage into the sea except as provided otherwise in the specific regulations dealing with the discharge of garbage outside special areas, the special requirements around the discharge of garbage from fixed or floating platforms, the discharge of garbage within special areas and the regulations drafted according to the exception regulations in MARPOL Annex V.

5.7. Discharge of garbage

The national legislation must include regulations on the following specifics around the discharge of garbage:

- Discharge of garbage outside special areas
- Special requirements for discharge of garbage from fixed or floating platforms
- Discharge of garbage within special areas
- Exceptions

The specifics of these regulations are to be found in the revised MARPOL Annex V regulations 4, 5 and 6 and Parties are called to be mindful of these provisions as these will constitute the bases by which prohibitive acts will be formulated.

5.8. Reception facilities

The governments of each Party must ensure the provision of reception facilities. It will not be suitable to include a regulation on reception facilities in national legislation applying to ships. It would be more suitable to include a regulation on reception facilities in regulations directed at ports and harbours. Parties must refer to the Consolidated guidance for port reception facility providers and users as found in MEPC.1/Circ.834

Parties must ensure the provision of reception facilities in their ports or terminals to receive garbage from ships while causing no undue delay in providing the services.

Parties with coastlines bordering special areas shall provide reception facilities in all ports and terminals within the special area and shall notify the IMO on the establishment of such reception facilities. The IMO shall then establish a date from which the requirements of Regulation 6 of Annex V in respect of the area in question are to take effect. The IMO shall also notify all Parties of the established date. Until this date is established, ships that are navigating in a special area shall comply with the requirements of Regulation 4 of Annex V (discharge of garbage outside special areas).

Small Island Developing States (SIDS) may provide a regional reception facility, when such arrangements are the only practical means to satisfy the reception facilities requirements due to their unique circumstances. Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan (RRFP) (2012 Guidelines for the development of RRFP in MEPC.221(63))

When reception facilities provided are alleged to be inadequate Parties must inform the IMO.

Nonetheless, a Party in its capacity as a flag State must include in the implementing regulations of MARPOL Annex V a requirement for its national ships to comply with the requirements on discharge of waste in a port or terminal including that of recording information on the waste discharged, etc. Ship owners/Crew must also make the necessary reporting on the inadequacy of reception facilities which need to be reported to IMO. These form part of the duties of shipowners and crew, which could be incorporated in the implementing regulations.

5.9. Placards, garbage management plans and garbage record keeping

The national legislation must make provisions for dealing with placards, garbage management plans and garbage record keeping. Regulation 10 of the revised MARPOL Annex V can be reproduced as national regulations without any changes to them. Regulation 10(1) sets out the specifics around placards while regulation 10(2) deals with garbage management plans. The 2012 Guidelines for the development of garbage management plans, adopted by resolution MEPC. 220(63), as amended, provides further direction on complying with the requirements for a ship's garbage management plan, and are intended to assist the shipowner/operator in the implementation of regulation 10.2 of the revised MARPOL Annex V. It is important to note that shipowners and operators should also consult other available technical guidance on shipboard garbage handling such as, ISO 21070 "Standard for the Management and handling of shipboard garbage" which outlines best management practices for shipboard garbage management and, to the extent it is consistent with the revised MARPOL Annex V, should be incorporated in any garbage management plan.

A ship's garbage management plan should detail the specific ship's equipment, arrangements and procedures for the handling of garbage. The plan may contain extracts and/or references to existing company instructions. The guidelines for the development of garbage management plans also includes specifics on the prevention of garbage and matters to be addressed in the garbage management plan, including the designated person in charge of carrying out the plan, procedures for collecting garbage, procedures for processing garbage, procedures for storing garbage or reusable or recyclable material as well as procedures for discharging garbage.

5.10. Inspection, detention, penalties

As with all legislation it must include provision for regulation on inspection, detention and penalties. Port State control on operational requirements are specifically dealt with in Regulation 9 the revised MARPOL Annex V. Regulation is directed to states and cannot be reproduced as is. The drafters responsible for national legislation to incorporate this provision must therefore craft the language in such a manner that it provides a legal basis to exercise control over foreign-flagged ships when in a port or an offshore terminal of another Party. The Port State control on operational requirements of Regulation 9 of the revised MARPOL Annex V includes the inspection of ships, where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of pollution by

garbage. This inspection shall be done by Port State Control Officers (PSCOs) and should not lead to undue delay of the vessel. Inspections can vary from simple to detailed and the Procedures for port State control, 2019 contained in resolution A.1138(31)

National legislation must also impose sanctions severe enough to discourage violation. Sanctions to be imposed on ships violating the provisions of the national law may include the imposition of fines commensurate to the gravity and the frequency of the commission of the offense. For ships that are operating in domestic waters, sanctions could come in the form of withdrawal of the authority or permit to operate a shipping service. The imposition of fines and penalties is contingent on the mandatory and prohibited acts as are provided in the law or implementing regulations, therefore, it is important that compliance with such requirements are stipulated in any grant of authority/permit to operate a shipping service.

6. Tools to enhance implementation

6.1. III Code

The III Code is designed to assist States in the implementation of the IMO instruments. To accomplish this objective, the Code recommends that States:

- develop an overall strategy to ensure that their international obligations and responsibilities as a flag, port and coastal State are met;
- establish a methodology to monitor and assess that the strategy ensures effective implementation and enforcement of relevant international mandatory instruments; and
- continuously review the strategy to achieve, maintain and improve the overall organizational performance and capability as a flag, port and coastal State.

6.2. 2017 Guidelines for implementation of MARPOL Annex V

The 2017 Guidelines for implementation of MARPOL Annex V, contained in resolution MEPC.295(71), are aimed at assisting:

- Governments in developing and enacting domestic laws which implement MARPOL Annex V;
- Shipowners, ship operators, ship crews, cargo owners and equipment manufacturers in complying with requirements set forth in MARPOL Annex V and relevant domestic laws; and
- Port and terminal operators in assessing the need for, and providing adequate reception facilities for garbage generated on all types of ships. In the interest of uniformity, governments are requested to refer to the Guidelines and related guidance developed by IMO.

6.3. Port State MOUs

Another tool to enhance implementation is Port State MOUs. Regulations 6 and 8 of MARPOL and other IMO resolutions sets the groundwork for cooperation and inter-change as a mutual effort of enforcement among Parties to the Convention. Such cooperation can be an effective tool in fostering clarity and harmony in implementation and compliance objectives, in collecting evidence and in enforcement procedures. Reciprocal arrangements in investigation and

compliance monitoring can take several forms, one of which is through Memoranda of Understanding (MOUs) where participating countries undertake to inspect and agreed percentage of the estimated number of foreign flagged-ships entering their respective ports.

6.4. Training and information for crew and stakeholders

Governments should undertake training, education and public information programmes suited to all their seafaring communities under their jurisdiction. These include ensuring that training and education in respect of MARPOL are included in the training programmes leading to certification under STCW and STCW-F. Likewise, information to passengers and other stakeholders should be undertaken such as for example the installation of placards onboard. Parties are encouraged to undertake information campaigns through radio, television, periodicals, posters and social media, among others, to inform the general public and non-seafaring communities on the impact of garbage at sea.

6.5. Reporting schemes and data dissemination

The reportorial requirement imposed on Parties is another way of collecting information help monitor compliance with the convention. One primary obligation of Parties to a convention under MARPOL is to communicate all laws, regulation and related issuances to IMO and which in turn is made available to other Parties. Reports to IMO, flag and coastal States also provide the bases by which to remind Parties their failure, non-compliance with the requirements of the convention. Such reports could be used to initiate proceedings against a Party that is subject of an adverse report.

The information/data gathered through the Garbage record book provide a Party useful information by which to assess the effectiveness of the regulations and procedures implementing MARPOL Annex V.

6.6. Verification of compliance

Parties are subject to periodic audits by IMO in accordance with the audit standard to verify compliance with and implementation of MARPOL Annex V (Framework and Procedures for the IMO Member State Audit Scheme (Resolution A. 1067 (28)) The Secretary General shall have responsibility for administering the Audit Scheme while Parties have the responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings.

7. References and Other Sources of Information

Cobsea https://www.cobsea.org/documents/Meeting_Documents/Marine%20Litter/Annex%2011_Malaysia.pdf

Simplified overview of the revised MARPOL Annex V discharge provisions:
<http://www.imo.org/OurWork/Environment/PollutionPrevention/Garbage/Documents/Annex%20V%20discharge%20requirements%2001-2013.pdf>

IMO website on the prevention of pollution by garbage from ships:
<http://www.imo.org/OurWork/Environment/PollutionPrevention/Garbage/Pages/Default.aspx>

IMO amendments to the Annex of the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973 (revised MARPOL Annex V), adopted at 15 July 2011 (Resolution MEPC.201(62)).

IMO Guidelines for the implementation of MARPOL Annex V (Resolution MEPC.295(71) adopted on 7 July 2017), available at:
<http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Marine-Environment-Protection-Committee-%28MEPC%29/Documents/MEPC.295%2871%29.pdf>

IMO Guidelines for the development of garbage management plans (Resolution MEPC.220(63) adopted on 2 March 2012), available at:

[http://www.imo.org/KnowledgeCentre/IndexofIMOResolutions/Documents/MEPC%20-%20Marine%20Environment%20Protection/220\(63\).pdf](http://www.imo.org/KnowledgeCentre/IndexofIMOResolutions/Documents/MEPC%20-%20Marine%20Environment%20Protection/220(63).pdf)

MPA accessed 2019 https://www.mpa.gov.sg/web/wcm/connect/www/5ffee0e9-6142-4b89-9919-e5b94505a9c7/03_07_prevention_of_pollution_of_the_sea_garbage_regulations.pdf?MOD=AJPERES

Nguyen Van Truong. 2009. An overview on implementation of annex V-MARPOL 73/78 in Vietnam (2009) International Journal of Law ISSN: 2455-2194; Volume 5; Issue 2; Page No. 48-55