

INPUT BACKGROUND DOCUMENT FOR THE 2017 OCEANS CONFERENCE

Submitted by IMO

The following text is a non-exhaustive summary of information in relation to the clusters of most relevance to IMO. As part of the Conference Advisory Group, IMO has contributed to several of the IPWGs, and we would like to take this opportunity to re-iterate some of the messages we have provided to those groups. Further information can be provided by contacting Mr. Fredrik Haag (fhaag@imo.org).

Cluster 1: Marine Pollution including from land based activities (SDG Target 14.1)

Shipping is the safest, most secure, most efficient and most environmentally sound means of bulk transportation – with declining rates of accidents, improving turnaround of ships and significant reductions in discharges to sea or emissions to air. Much of these advances have been made possible as a result of IMO's regulations, industry initiatives and technological developments; by helping to build technical maritime capacity in developing countries, where some 70%-75% of the world's merchant fleet is registered.

However, there are occasions when there may be possible adverse effects on marine life through operational discharges or catastrophic events. The main pollutants of concern with respect to shipping are oil, hazardous and noxious substances and other cargoes capable of causing harm, sewage, garbage, air pollutants, anti-fouling agents for hull treatment, and transported invasive species. Through IMO and its regulatory framework of international conventions, codes and guidelines, these pollutants have been addressed by the global community.

The size of the world's fleet of ships has been increasing rapidly in the period from 2000-2013 (see WOA-I, chapter 17, and for most recent data Trends for shipping sector, see UNCTAD Review of Maritime Transport 2016: http://unctad.org/en/PublicationsLibrary/rmt2016_en.pdf

Despite the growth in ship traffic, the sources of pollution from the shipping sector have been effectively regulated through the global regulatory framework (IMO conventions), An example is provided by the number of major accidental oil spills of more than 7 tonnes, which have, decreased from around 120 in the late 1970s to around zero in 2010s, see http://www.itopf.com/fileadmin/data/Documents/Company_Lit/OilSpillstats_2013.pdf

An additional level of protection to sensitive areas is provided by establishing Special Areas under MARPOL (Annexes, 1, II, IV, V,) and Emission Control areas under MARPOL Annex VI, and Particularly Sensitive Sea Areas (PSSAs).

The combined effect of measures to reduce the environmental impacts of shipping has been to achieve a steady reduction in the number of ships lost at sea, with environmental, social and economic benefits: less pollution of the sea, fewer lives lost and less disruption of trade (ref. WOA-I, Chapter 17, p.14)

Current activities towards the conservation and sustainable use of the oceans, seas and marine resources, including capacity building activities

Over the past 40 years, global environmental rules and standards have been developed to regulate most of the ship-related sources of pollution. Steps are now being taken to further strengthen the uniform enforcement of these rules and standards around the globe.

The global regulatory framework includes international conventions addressing the entire life cycle of ships, “from cradle to grave”, including design, building, operation and ship recycling, as well as the certification and training of seafarers. The international conventions of most direct relevance to SDG 14.1 include:

- International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997 (MARPOL);
- International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended;
- International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION), 1969 (and its 1973 Protocol on substances other than oil);
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LC), 1972 (and the 1996 London Protocol);
- International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990 (and its 2000 OPRC-HNS Protocol on hazardous and noxious substances);
- International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS), 2001;
- International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) 2004;
- The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (HKC), 2009

Challenges to the conservation and sustainable use of the oceans, seas and marine resources for sustainable development

Some of the challenges, from a shipping perspective, include:

- The major international conventions have almost universal coverage (MARPOL), but for other conventions there are still further ratifications needed before universal coverage is achieved.
- Compliance and enforcement still needs strengthening, including in some instances investments in infrastructure by the Port State.
- Skilled staff and facilities are needed to implement rules and standards. Although the IMO and other international organizations have programmes to support such capacity building, there are still gaps.
- In many parts of the world, coastal States do not have adequate plans to respond to maritime casualties. Such plans often require substantial investment in equipment and the training of personnel. The resources for such investment are sometimes lacking

Opportunities

There is a need for further acceptance and implementation of IMO instruments to ensure universal acceptance and compliance. In this regards, it should be noted that the IMO Member State Audit Scheme (IMSAS) commenced from 1 January 2016, with the aim of determining the extent to which they give full and complete effect to their obligations and responsibilities contained in a number of IMO treaty instruments (including MARPOL), see <http://www.imo.org/en/OurWork/MSAS/Pages/default.aspx>

Furthermore, with respect to the safe and environmentally sound recycling of ships; States that have not yet done so, are encouraged to consider ratifying or acceding to the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009, to facilitate its early entry into force.

Because international shipping takes place on the world's oceans, the work of IMO, which is responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships, is integral to SDG 14. IMO's objectives can be summarized as follows: Safe, secure and efficient shipping on clean oceans.

The work of IMO therefore relates to most, if not all, of the SDG 14 targets, particularly in relation to its Multilateral Environmental Agreements (MEAs). Implementing and enforcing the main conventions and regulations adopted by IMO Member States actively addresses marine pollution, mainly from sea-based sources but also, at least indirectly, from land-based sources, for example through the LC/LP on dumping wastes and other matter at sea.

IMO's work also supports the targets dealing with managing and protecting marine and coastal ecosystems, not least through the establishment of Special Areas under MARPOL and Particularly Sensitive Sea Areas (PSSAs). These are:

- 10 Special Areas for MARPOL Annex I (oil);
- 1 Special Area for MARPOL Annex II (noxious liquid substances);
- 1 Special Area for MARPOL Annex IV (sewage);
- 8 Special Areas for MARPOL Annex V (garbage);
- 4 Emission Control Areas MARPOL Annex VI; and
- 14 PSSAs, one of which has been extended twice.

For detailed information see:

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

IMO's work to address climate change is also of relevance. Air pollution and greenhouse gas emissions from ships are regulated under MARPOL Annex VI. And, in the context of ocean acidification, IMO has established a regulatory framework (under the LC/LP) that will contribute to climate-change mitigation by regulating for carbon capture and sequestration in sub-seabed geological formations, and marine geoengineering.

IMO is clearly contributing to the conservation and sustainable use of oceans and their resources by developing and adopting international law, as reflected in the United Nations Convention on the Law of the Sea (UNCLOS). The Organization is the competent international authority on both pollution from dumping (UNCLOS article 210) and pollution from vessels (UNCLOS article 211).

IMO is also working with the FAO on mutual aspects to address illegal, unreported and unregulated (IUU) fishing.

Development of partnerships

IMO runs an extensive Integrated Technical Cooperation Programme to build and strengthen capacity in maritime administrations to implement IMO conventions, including major projects with partners and donors to address issues such as ballast water management, ships' energy efficiency, etc. For further information see <http://www.imo.org/en/OurWork/TechnicalCooperation/Pages/Default.aspx>

IMO has been successful in developing partnerships with national and regional institutions which provide financial and in-kind support to facilitate the implementation of specific activities. As of July 2016, the number of operational partnerships was 73, of which 41 are with developing and developed countries as well as territories and the remaining partnership arrangements are with international organizations, regional institutions and industry.

These partnerships have provided valuable support for the delivery of activities under the ITCP. They have also promoted its effectiveness by increasing general awareness of IMO's mandate and the ITCP, the ownership of the IMO technical assistance programmes by developing countries and regions and the synergies between recipients/donors/regional bodies and international organizations.

In addition, IMO runs several major projects supporting the implementation of its conventions, including: GEF-UNDP-IMO Global Maritime Energy Efficiency Partnerships (GloMEEP) project and the Global Industry Alliance for Maritime Energy Efficiency (GIA); IMO-European Union Maritime Technology Cooperation Centres Network (MTTC-N) Project; GEF-UNDP-IMO GloBallast Partnerships Project and the Global Industry Alliance for marine biosecurity; IMO-Norad Projects on Implementation of Marine Environmental Conventions in East Asia; IMO-Norad Project on Particularly Sensitive Sea Areas in East Asia, IMO-Norad Project on Regional Oil and Chemical Spill Response in South Asia; IMO-Norad Project on Safe and Environmentally Sound Ship Recycling in Bangladesh (SENSREC Project); IMO-IPECA Global Initiative Project for West, Central and Southern Africa (GIA WACAF) on Oil spill preparedness and response.

Key messages for consideration

Because international shipping takes place on the world's oceans, the work of IMO, which is responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships, is integral to SDG 14.

Shipping relates to most, if not all, of the SDG 14 targets, particularly in relation to IMO's environmental conventions. Implementing and enforcing the main conventions and regulations adopted by IMO Member States actively addresses marine pollution, mainly from sea-based sources but also, at least indirectly, from land-based sources, for example through the LC/LP on dumping wastes and other matter at sea.

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Cluster 3: Climate change, ocean acidification and impact reduction on marine biodiversity and ecosystems (SDG Target 14.3)

Scientific gaps and management needs

GHG emissions from ships contribute to ocean acidification, therefore reducing these emissions can in turn contribute to a reduction of this phenomenon. A global regulatory framework addressing these emissions is in place under MARPOL Annex VI for new and existing ships, however there is still a need to better understand GHG emissions from international shipping beyond the information contained in the Third IMO GHG Study 2014. This includes the patterns, scenarios and reduction opportunities and barriers associated with these emissions in the short, mid and long term.

The Contracting Parties to the LC and LP have taken ground-breaking steps to mitigate the impacts of increasing concentrations of carbon dioxide in the atmosphere and to ensure that new technologies with the potential to cause harm to the marine environment are effectively controlled and regulated. The LC and LP have, so far, been the most advanced international regulatory instruments addressing carbon capture and sequestration in sub-sea geological formations (and marine geoengineering such as ocean fertilization).

Carbon Capture and Storage (CCS) is seen as one of the short term technological options for reducing net CO₂ emissions to the atmosphere by the Intergovernmental Panel on Climate Change (IPCC). CCS, as well as other geoengineering methods, need to be conducted in a comprehensive regulatory framework, based on a risk assessment and management approach. To that end, work by the Contracting Parties to the London Protocol has established a global regulatory mechanism for both CCS and marine geoengineering activities. Under the London Protocol, "Specific Guidelines for Assessment of Carbon Dioxide Streams for Disposal into Sub-seabed Geological Formation" have been developed. These Guidelines advise Parties on how to capture and sequester CO₂ in a manner that meets all the requirements of the Protocol and is safe for the marine environment, over both the short and long terms.

In 2013, the Contracting Parties to the London Protocol adopted resolution LP.4(8) on the Amendment to the London Protocol to regulate the placement of matter for ocean fertilization and other marine geoengineering activities.

To provide a better understanding of the potential environmental (and social/economic) impacts of different marine geoengineering approaches on the marine environment, and to provide advice to the London Protocol Parties to assist them in identifying those marine geoengineering techniques that it might be sensible to consider for listing in the new Annex 4 of the Protocol,

In 2015, GESAMP agreed to establish a Working Group on Marine Geoengineering (Working Group 41). The new GESAMP Working Group, which is led by IMO, is also supported by IOC-UNESCO and WMO, and is expected to provide its final report in 2017.

Suggested measures applied to fill the gaps

The IMO has agreed on a data collection system, which was adopted at the recent 70th session of the Marine Environment Protection Committee (MEPC 70). The data collected will provide a firm basis on which future decisions on additional measures, over and above those already adopted by IMO, can be made. The new mandatory data collection system is intended to be the first step in a three-step approach, in which analysis of the data

collected would provide the basis for an objective, transparent and inclusive policy debate. This would allow a decision to be made on whether any further measures are needed to enhance energy efficiency and address GHG emissions from international shipping. If so, proposed policy options would then be considered.

MEPC 70 also approved a roadmap (2017 through to 2023) for developing a “Comprehensive IMO strategy on reduction of GHG emissions from ships”, which foresees an initial GHG strategy to be adopted in 2018. It contains a list of activities with relevant timelines and provides for alignment of those new activities with the ongoing work by the MEPC on the three-step approach to ship energy efficiency improvements mentioned above. This alignment provides a way forward to the adoption of a revised strategy in 2023 to include short-, mid-, and long-term further measures, as required, with implementation schedules. The roadmap also includes further IMO GHG studies, recognizing the need to ensure a continuous time series of emissions figures.

Increasing the understanding of the potential environmental (and social/economic) impacts of different marine geoengineering approaches on the marine environment, for the purpose of supporting the implementation of the 2013 amendments to the London Protocol.

Priority areas

Implementation of a robust data collection system, which will be mandatory from 2019 for MARPOL Annex VI Parties (at present there are 88); moreover Parties are encouraged to implement it voluntarily as early as possible, while several non-Parties are also expected to implement it voluntarily and relevance guidance is being developed.

Implementation of the GHG roadmap, to ensure timely and ambitious further work on the development of IMO's GHG strategy; this will include significant intersessional work, recognizing the urgency, importance and complexity of this topic.

Further technical cooperation activities, including on-going major projects such as the award winning UNDP-GEF-IMO Global Maritime Energy Efficiency Partnerships (GloMEEP) project, to increase the number of Parties to MARPOL Annex VI and enhance its effective implementation, taking into account also the concept of technology transfer for the benefit of developing countries.

Consideration of any impacts from other measures, such as the global sulphur cap agreed at MEPC 70 to come into effect in 2020 for fuel oil used on board ships, which may have both positive and negative effects e.g. through the uptake of alternative fuels (which could also reduce GHG emissions in addition to those of sulphur oxides), and the installation of exhaust gas cleaning systems (whose washwater is acidic), respectively.

Promotion and application of the regulatory frameworks provided by the London Protocol with respect to marine geoengineering and CCS, which includes the acceptance of the 2013 amendments to the Protocol by Contracting Parties, and increasing the number of Contracting Parties to the Protocol, to achieve a universal membership.

Cluster 5: Marine Protected Areas and effective management plans (Marine Protected Areas and effective management plans (SDG Target 14.5

IMO's environmental work can be of considerable direct impact to this target, including several of our environmental conventions, guidelines and technical cooperation activities. This includes IMO's contribution through preventing pollution caused by shipping as well as the London Convention and Protocol, and in particular the two area based management

tools used by IMO, namely Particularly Sensitive Sea Areas (PSSAs), and Special Areas/Emission Control Areas under MARPOL.

Key area based management tools within IMOs regulatory framework

- Special Areas under MARPOL (Annexes I, II, IV, V) and Emission Control areas under MARPOL Annex VI (see 2013 Guidelines for the designation of Special Areas under MARPOL, A.1087(28));
- Particularly Sensitive Sea Areas (PSSAs) (see 2005 Revised Guidelines for the identification and designation of PSSAs, A.982(24) and as amended by MEPC.267(68));
- Routing, reporting and ship traffic services under SOLAS; and
- 1996 Protocol to the London Convention (Ocean fertilization/marine geoengineering (resolution LP.4(8))

Special and Emission Control Areas under MARPOL

MARPOL was adopted through IMO in 1973 and amended in 1978 and 1997 and kept updated with relevant amendments. The MARPOL Convention addresses pollution from ships by oil; by noxious liquid substances carried in bulk; harmful substances carried by sea in packaged form; sewage, garbage; and the prevention of air pollution from ships. MARPOL has greatly contributed to a significant decrease in pollution from international shipping and applies to 99% of the world's merchant tonnage.

In Annex I Prevention of pollution by oil, Annex II Control of pollution by noxious liquid substances, Annex IV Prevention of pollution by sewage from ships and Annex V Prevention of pollution by garbage from ships, MARPOL defines certain sea areas as "special areas" in which, for technical reasons relating to their oceanographical and ecological condition and to their sea traffic, the adoption of special mandatory methods for the prevention 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 and may encompass the maritime zones of several States, or even an entire enclosed or semi-enclosed sea area. Mainly found in EEZs with some enclosing high seas waters (Mediterranean). A Special Area designation can only become effective when adequate port reception facilities are provided for ships, in accordance with the provisions of MARPOL. Annex VI Regulations for the Prevention of Air Pollution from Ships establishes r Emission Control Areas with more stringent controls on sulphur oxide emissions (SOx) and nitrogen oxides (NOx) Emission Control Areas. An overview of Special Areas can be found at: <http://www.imo.org/en/OurWork/Environment/SpecialAreasUnderMARPOL/Pages/Default.aspx>

The 2013 Guidelines for the designation of Special Areas under MARPOL ensure that the interests of the coastal State, flag State, and the environmental and shipping communities are considered. Necessary information needed to assess a proposed Special Area includes:

- Oceanographic conditions - causing the concentration or retention of harmful substances in the waters or sediments of the area;

- Ecological conditions - indicating that protection of the area from harmful substances is needed to preserve (such as depleted, threatened or endangered marine species); and
- Vessel traffic characteristics – normal MARPOL ship discharges would be unacceptable in the light of the existing oceanographic and ecological conditions in the area.

There are currently fourteen sea areas that are designated as Special Areas or Emission Control Areas, and two are located in areas beyond national jurisdiction.

Particularly Sensitive Sea Areas (PSSAs)

A PSSA is a sea area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities. It is used by IMO to designate PSSAs in and beyond the territorial sea with a view to the adoption of international protective measures regarding pollution and other damage caused by ships. The criteria for the identification of particularly sensitive sea areas and the criteria for the designation of special areas are not mutually exclusive. In many cases a Particularly Sensitive Sea Area may be identified within a Special Area and vice versa. At the time of designation of a PSSA, an associated protective measure, which meets the requirements of the appropriate legal instrument establishing such measure, must have been approved or adopted by IMO to prevent, reduce, or eliminate the threat or identified vulnerability.

The Revised Guidelines for the identification and designation of PSSAs offers guidance in the formulation and submission of applications for designation of PSSAs and allows for the assessment of such applications by IMO through its Marine Environment Protection Committee (MEPC). The Guidelines ensure that all interests (coastal and flag States, and the environmental and shipping communities) are thoroughly considered. These guidelines include criteria to allow areas to be designated a PSSA if they fulfil a number of criteria, including: ecological criteria, such as unique or rare ecosystem, diversity of the ecosystem or vulnerability to degradation by natural events or human activities; social, cultural and economic criteria, such as significance of the area for recreation or tourism; and scientific and educational criteria, such as biological research or historical value. The provisions of the United Nations Convention on the Law of the Sea (UNCLOS) are also relevant.

When an area is approved as a PSSA, specific measures can be used to control the maritime activities in that area, such as routing measures, strict application of MARPOL discharge and equipment requirements for ships, such as oil tankers; and installation of Vessel Traffic Services (VTS), see section on SOLAS. below. To date 13 PSSAs have been designated, two of which have been extended, no one of which contain areas beyond national jurisdiction. They do however have the potential to be designated in such areas. An overview of PSSAs can be found at: <http://www.imo.org/en/OurWork/Environment/PSSAs/Pages/Default.aspx>.

Cluster 6: Blue growth and increasing economic benefits for SIDS and LDCs from the sustainable use of marine resources including through sustainable management of fisheries, aquaculture and tourism (SDG Target 14.7)

Shipping needs a global regulatory framework in which to operate: as an inherently international industry it requires the same rules to apply at both ends of a voyage. International shipping is the carrier of world trade, transporting around 90% of global commerce. Without it, the bulk transportation of raw materials and the import and export of

affordable food and goods would simply not be possible. The global regulatory framework is provided by the International Maritime Organization (IMO), which has adopted more than treaties regulating ship design and operation. The most important of them – concerning the safety of life at sea and the protection of the environment – today applies on 99% of the world's merchant fleet.

International shipping contributes to the three pillars of sustainable development. It facilitates global commerce and, the creation of wealth and prosperity among nations and peoples, creating a wide variety of jobs on board ships and ashore, with direct and indirect beneficial impacts on the livelihoods of others. It helps to moderate prices on exported goods (and therefore reduce inflation and its negative impact on real incomes) by providing a dependable, efficient and low cost means of transporting goods globally. In comparison to other transport modes, it provides the most environmentally sound and energy-efficient means of moving huge quantities of cargoes and people.

Further greening of the sector is nevertheless desirable and achievable. The challenges for IMO and the shipping industry include promoting entry into force of all of IMO's environmental treaties; reducing even further the pollution caused by ships through discharges to sea and air emissions, by helping countries to ensure global, uniform and effective implementation and enforcement of IMO standards; developing standards to ensure that the operation of ships using alternative sources of fuel is both safe and environmentally sound; further improving the energy efficiency of ships; developing additional means to further reduce emissions of greenhouse gases from ships; preventing and controlling the transfer of invasive aquatic species through ships' ballast water and ships' hull fouling, and addressing the technical, operational and environmental aspects of the ever-increasing size of ships.

Cluster 7: Means of Implementation including financial resources, capacity building and technology transfer and enhance conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea. (SDG Target 14.a and c)

IMO is the depositary and secretariat for more than 50 global instruments, about half of which are related to the marine environment. IMO compiles information about ratification/accession of each of the legal instruments. The dataset includes information for each treaty, such as:

- Date of entry into force;
- Number of contracting States; and
- Percentage of the world tonnage to which treaty applies. In some cases other criteria for EIF apply, such as recycling capacity for the Hong Kong Ship Recycling Convention, and in those cases such information is collected as well.

Data is also available by country:

- Treaties that the country has ratified;
- Ratification type (accession/ratification/denouncement);
- Date of entry into force for the treaty;
- Date of entry into force in country;

- Date when instrument was deposited; and
- Notes (e.g. reservations).

The most crucial treaties in relation to 14(c) may be:

- International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto and by the Protocol of 1997 (MARPOL);
 - International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended;
 - International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION), 1969 (and its 1973 Protocol on substances other than oil);
 - Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LC), 1972 (and the 1996 London Protocol);
 - International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990 (and its 2000 OPRC-HNS Protocol on hazardous and noxious substances);
 - International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS), 2001;
 - International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM), 2004; and
 - The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (HKC), 2009
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