

Ocean science and the United Nations Decade of Ocean Science for Sustainable Development

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by the International Maritime Organization (IMO)

The context – Shipping and the role of IMO

International shipping uses the world's oceans to deliver more than 80 per cent of global trade by volume and over 70 per cent of global trade by value, and the international shipping fleet is the biggest user of the surface of the ocean and seas. Activities conducted from vessels include voyages carrying the world's traded goods, fishing, tourism, exploration and exploitation of seabed mineral resources, as well as scientific research. Shipping is the engine that keeps the global economy moving, contributing to the livelihoods of many. It is the most cost-effective and cleanest way to move goods in quantity. It facilitates commerce and helps to create prosperity among nations and peoples. Shipping is thus a fundamental component of any programme for sustainable development.

IMO is the United Nations specialized agency responsible for developing and adopting measures to improve the safety and security of international shipping and to prevent marine and atmospheric pollution from ships. IMO conventions, upon entry into force, cover all ships, regardless of the flag they fly, as ships of non-convention States entering the waters or ports of convention States are subject to the "no more favourable treatment principle", which is embedded in IMO treaties. In other words, this principle allows for a level playing-field so that ship operators cannot cut corners or compromise on safety, security and environmental performance. This approach is also a vehicle for innovation and efficiency within the shipping and maritime industries.

IMO currently has 174 Member States, and more than 130 observers from international organizations and NGOs representing all maritime interests. IMO has adopted over 50 treaties, the vast majority of which are in force and are globally binding. In addition, to supplement these treaties, numerous measures such as guidelines, guidance, recommended practices and codes have been agreed. Some of these are dealing directly with the protection of biodiversity in areas beyond national jurisdiction.

The role of science in the work of IMO – the example of GESAMP

For parts of its scientific advice, IMO relies on the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), which is an advisory body, established in 1969, that advises the UN system on the scientific aspects of marine environmental protection. At present GESAMP is jointly sponsored by ten UN organizations with responsibilities relating to the marine environment (IAEA, IMO, FAO, UN, UNDP, UNESCO-IOC, UNEP, UNIDO, WMO, and ISA), utilizing GESAMP as a mechanism for coordination and collaboration among them. GESAMP functions are to conduct and support marine environmental assessments, to undertake in-depth studies, analyses, and reviews of specific topics, and to identify emerging issues regarding the state of the marine environment. GESAMP itself consists of experts drawn from a wide range of relevant disciplines, who act in an independent and individual capacity. Studies and assessments are usually carried out by dedicated working groups, most of whose members are not sitting members of GESAMP but part of the broader GESAMP network. Through a well-established system of internal and external peer review, GESAMP provides authoritative, independent, interdisciplinary scientific advice to the sponsoring organizations to support the protection and sustainable use of the marine environment.

IMO and the shipping industry also utilize GESAMP as part of their regulatory mechanism, through two standing working groups. Working Group 1 (WG 1, or GESAMP-EHS) on the Evaluation of the hazards of harmful substances carried by ships evaluates, at the request of IMO, the hazards to the environment and human health of bulk liquid chemicals carried by ships, with around 900 hazard profiles currently on record. The hazard profile contains a unique fingerprint of each substance, providing information on 13 separate human health, environmental, and physico-chemical hazard criteria. The hazards of bulk liquid substances regulated under MARPOL Annex II and, based on the data received, are assigned an appropriate pollution category for the substance. On the basis of the GESAMP hazard profile and other properties, the carriage requirements for the substance when carried on a ship are subsequently assigned by IMO. The system for categorization of noxious liquid substances, as set out in appendix I of MARPOL Annex II, together with ship design and operational requirements, form the regulatory framework for the prevention of pollution from noxious liquid substances from ships. Relevant hazards noted in the GESAMP hazard profile may also be utilized for the classification of substances as a “Marine Pollutant” for packaged goods shipments, in accordance with the requirements set out in the International Maritime Dangerous Goods Code (IMDG Code).

GESAMP Working Group 34 (WG 34) carries out independent reviews of applications for ‘active substances’ to be used in ballast water management systems. ‘Active Substances’ are defined by the International Convention for the Control and Management of Ships’ Ballast Water and Sediments, (BWM Convention) as “substances or organisms, including a virus or a fungus that have a general or specific action on or against harmful aquatic organisms and pathogens” and the approval of systems using such substances is described in resolution MEPC.169(57) adopted in 2008. However, not only ‘Active Substances’ are evaluated by WG 34, all other substances considered relevant are taken into account in the evaluation report. The Procedure for approval of ballast water management systems that make use of Active Substances (G9) contained in resolution MEPC.169(57) under the BWM Convention also distinguishes ‘Relevant Chemicals’ and ‘Other Chemicals’. Therefore, WG 34’s task is to evaluate the risks for the crew, the ships’ safety, the risk for the public at large and the environmental safety of the BWMS. It is furthermore the intention of WG 34 to perform these evaluations in a consistent and transparent manner, which helps Administrations to prepare a concise dossier, containing all the necessary data. The Methodology, as developed by WG 34 in the course of its work, serves as guidance in the evaluation.

The BWM Convention was adopted at IMO on 13 February 2004, in response to the increasing concern of the international community with regard to the transfer of invasive species in ships’ ballast water, and entered into force on 8 September 2017. To date (January 2019), 79 countries have ratified the BWM Convention, and the required minimum number is 30. These countries represent 80.94% of the world’s tonnage. Within this framework, an approval procedure has been set up for those ballast water management systems which make use of an Active Substance or Preparation to comply with the Convention. The procedure consists of a two-step approach for granting Basic Approval and Final Approval. The approval is granted by the Marine Environment Protection Committee (MEPC) based on the advice provided by WG 34.

These two examples illustrate the role that science plays on a daily basis in the policy and regulatory activities in the shipping sector. In fact, many of the environmental regulations and treaties developed through IMO originate from, and have been influenced by, significant scientific input, both in terms of identification of the actual issue and the formulation of the regulatory response. This is true for the BWM Convention mentioned above, as well as the 2001 International Convention on the Control of Harmful Anti-fouling systems on ships, but also with respect to the regulatory framework on energy efficiency measures (MARPOL Annex VI).

Science also plays a crucial part in informing the work carried out under the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Convention), and its 1996 Protocol (London Protocol). The London Convention and London Protocol Scientific Groups are responsible for providing scientific and technical advice to the Contracting Parties and developing up-to-date guidance on effective implementation of the treaties. That scientific advice has been particularly crucial in the development of the more recent amendments to the Protocol, on sequestration of carbon in sub-seabed geological formations (2006), and on marine geoengineering (2013). For more information in this regard, please refer to the LC/LP website at <http://londonprotocol.imo.org>.

Conclusion - IMO and the Decade of Ocean Science for Sustainable Development

As is hopefully apparent from the above, the work of IMO is central to sustainable development, and science as is a principal component of the work of IMO. Therefore, since the initial request from IOC of UNESCO in 2017, IMO has expressed its willingness and intention to join IOC and its partners in the efforts to prepare and implement the Decade of Ocean Science.

The IMO Member States, through both the MEPC and the governing bodies of the London Convention and Protocol, have expressed that the Decade could be a vehicle to support IMO's work, in support of marine environmental protection in the context of Agenda 2030, and that work undertaken under the Decade could be complementary and mutually beneficial to those organizations involved (see LC 40/16, paragraphs 11.6 to 11.11, and MEPC 73/19, paragraphs 18.1 and 18.2).
