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LEGAL ISSUES AND REGULATORY DEVELOPMENTS

In 2014, important regulatory developments in the field of transport and trade facilitation included the adoption of the International Code for Ships Operating in Polar Waters (Polar Code), expected to enter into force on 1 January 2017, as well as a range of regulatory developments relating to maritime and supply chain security and environmental issues.

To further strengthen the legal framework relating to ship-source air pollution and the reduction of greenhouse gas (GHG) emissions from international shipping, several regulatory measures were adopted at IMO, and the third IMO GHG Study 2014 was finalized. Also, guidelines for the development of the Inventory of Hazardous Materials required under the 2010 International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS Convention) – which, however, is not yet in force – were adopted, and further progress was made with respect to technical matters related to ballast water management, ship recycling, and measures helping to prevent and combat pollution of the sea from oil and other harmful substances.

Continued enhancements were made to regulatory measures in the field of maritime and supply chain security and their implementation, including the issuance of a new version of the World Customs Organization (WCO) Framework of Standards to Secure and Facilitate Global Trade (SAFE Framework) in June 2015, which includes a new pillar 3: “Customs-to-other government and inter-government agencies”. As regards suppression of maritime piracy and armed robbery, positive developments were noted in the waters off the coast of Somalia and the wider western Indian Ocean. However, concern remains about the seafarers still being held hostage. A downward trend of attacks in the Gulf of Guinea was also observed, indicating that international, regional and national efforts are beginning to take effect.

A. IMPORTANT DEVELOPMENTS IN TRANSPORT LAW

1. Adoption of the International Code for Ships Operating in Polar Waters

The International Code for Ships Operating in Polar Waters (Polar Code), a new mandatory instrument establishing safety and environmental rules that are applicable to both Arctic and Antarctic shipping, was recently adopted at IMO. As noted in its preamble, the Polar Code “has been developed to supplement existing IMO instruments in order to increase the safety of ships’ operation and mitigate the impact on the people and environment in the remote, vulnerable and potentially harsh polar waters”. Part I of the Polar Code, which establishes safety-related requirements, along with associated amendments¹ to make it mandatory under the International Convention for the Safety of Life at Sea (SOLAS), was adopted in November 2014 by the IMO’s Maritime Safety Committee (MSC) in response to the increasing numbers of ships operating in Arctic and Antarctic waters. Part I of the Polar Code addresses the safety of shipping in polar waters and identifies measures required over and above standard shipping regulations to ensure that ships can operate safely under the difficult conditions in these waters. Part II of the Code, which addresses the prevention of pollution from shipping, along with associated amendments to make it mandatory under MARPOL, was adopted by the IMO Marine Environment Protection Committee (MEPC) in May 2015.

The complete Polar Code is expected to enter into force on 1 January 2017 through the tacit acceptance procedure.² Thus, it will apply to new ships constructed on or after 1 January 2017. Ships constructed before that date will need to meet the relevant requirements of the Code by the first intermediate or renewal survey, whichever occurs first, after 1 January 2018.

Background

Oceans play a central role in helping regulate the climate, absorbing CO₂, providing food and nutrition and supporting livelihoods. However, ocean resources and services are exposed to threats including those associated with GHG emissions and air pollution; ocean acidification; illegal, unreported and unregulated fishing; and marine pollution. As highlighted by the United Nations Secretary-General in his remarks on the occasion of World Oceans Day 2015, oceans

“are an essential element in our emerging vision for sustainable development, including the new set of sustainable development goals now being prepared to guide the global fight against poverty for the next 15 years” (United Nations Environment Programme, 2015). Noting that adopting agreements on climate change and ending poverty “will demand that [Governments] look at the essential role of [the] world’s oceans”, he called for a commitment to using “the gift of the oceans peacefully, equitably and sustainably for generations to come”.³

Polar waters deserve particular attention due to special conditions that make them more vulnerable to the impacts of commercial shipping such as, for instance, ship-source pollution. Large populations of wildlife in polar areas are completely dependent on the living resources in the oceans, and even a small oil spill may have devastating consequences for biodiversity and ecosystem health. Also, oil and chemical discharges and spills persist for much longer in the colder polar waters, thus having a greater impact on wildlife and on the livelihoods of people in these areas, both directly and indirectly, through the impact on food.⁴ At the same time, ships operating in polar waters and people aboard them are also exposed to a number of unique risks due, particularly, to the presence of large ice concentrations, poor weather conditions, extreme cold temperatures, remoteness and associated difficulties. Problems faced include, for instance, structural risks and difficulties in ships’ operations, reduced efficiency of ships’ machinery and equipment, lack of updated charts and navigation aids, difficulty in carrying out clean-up operations and difficulty or lack of availability of assistance from other ships in case of casualty.⁵

While polar shipping poses distinct operational challenges, the potential for shipping through Arctic waters has increased significantly in recent years. As a result of global warming and increasing rates of Arctic sea ice loss, new shipping lanes have opened up, mainly in summer, which might considerably shorten the shipping distances between Europe and Asia as compared to traditional routes, in particular those transiting through the Panama Canal. Thus, if the potential Arctic Sea lanes were fully open for traffic, savings on distance, time and costs – as well as fuel – could be achieved.⁶ For instance, a navigable North-West Passage offers a route between Tokyo and New York that is 7,000 kilometres shorter than the route through the Panama Canal. Taking into account canal fees, fuel costs and other relevant factors that

determine freight rates, the new trade lanes could cut the cost of a single voyage by a large container ship by as much as 20 per cent (Bergerson, 2008). Potential savings could be even greater for megaships unable to fit through the Panama and Suez Canals and currently sailing around the Cape of Good Hope and Cape Horn. It has been suggested that these potential shortcuts could foster greater competition with existing routes, including through a reduction in transport costs, thereby promoting trade and international economic integration (Wilson et al., 2004).

While the economic viability of trade along these new shipping lanes remains to be more fully explored, the volume and diversity of polar shipping is predicted to grow over the coming years. Challenges related to commercial shipping in an area which is both environmentally sensitive and operationally difficult need to be addressed, including through regulatory measures that serve to ensure that polar shipping develops in a safe and sustainable way, protecting both the safety of life at sea and the sustainability of the polar environments.⁷ Communities living in the polar areas may require capacity-building assistance to respond to the challenges associated with increasing commercial shipping in the region.⁸

Regulatory framework for polar shipping

The framework instrument governing the rights and responsibilities of nations in their use of oceans and the regulation of shipping is the 1982 United Nations Convention on the Law of the Sea (UNCLOS), whose provisions also apply in polar areas, with respect to the jurisdictional status of polar waters and international straits, maritime boundaries, navigational rights and freedoms, as well as coastal and port State control.⁹ Particularly relevant is article 234 of the Convention entitled “Ice-covered areas” providing that “Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone”. Such safety and environmental standards may be adopted by States either individually, through their national legislations, or collectively, through conventions and other instruments negotiated at international organizations, or regionally. The provisions of UNCLOS are supplemented by a broader regulatory framework, consisting of a number of international conventions and other legal instruments negotiated and adopted mainly at IMO and the International Labour Organization (ILO), which

deal with a wide range of safety, environmental and seafarers’ issues. Many of these legal instruments are widely accepted by States and their provisions are applicable generally, including in the polar areas, for States that are parties to them. Main conventions that establish mandatory rules and regulations include SOLAS, MARPOL and the Maritime Labour Convention, 2006 (MLC).

SOLAS¹⁰ is the main convention in the area of shipping safety, establishing international safety standards for the construction, machinery, equipment and operation of ships.¹¹ As regards marine environmental protection, the main convention is MARPOL,¹² which aims at the prevention of pollution of the marine environment by ships from operational or accidental causes; six technical annexes specifically deal with prevention and control of pollution by oil (annex I); noxious liquid substances carried in bulk (annex II); harmful substances carried by sea in packaged form (annex III); sewage from ships (annex IV); garbage from ships (annex V); and air pollution from ships (annex VI).¹³ Also worth noting in the context of pollution control and navigational safety is the Nairobi Wreck Removal Convention, 2007, which entered into force on 14 April 2015, key features of which were highlighted in last year’s *Review of Maritime Transport* (UNCTAD, 2014a).¹⁴ The regulation of seafarers’ issues also plays an important role, in particular given that seafarers’ working and living conditions can affect not only their own well-being and safety, but also the safety of ships and the protection of the marine environment from pollution. The MLC,¹⁵ consolidating more than 68 international labour standards relating to seafarers, is the main international instrument that addresses seafarers’ working and living conditions. Conditions in relation to seafarer competency, training and other matters related to ensuring the safety of ships and the people on board are mainly addressed through STCW and SOLAS. Amendments to the STCW and the STCW Code, adopted in Manila in June 2010, included “Training guidance for personnel on ships operating in ice-covered waters”, and “Measures to ensure the competency of masters and officers of ships operating in polar waters”.

The development of specific rules dedicated to polar shipping, which complement the general instruments on maritime safety and marine environmental protection mentioned above, began in the early 1990s, initially with a regulatory focus on the Antarctic area. For example, IMO designated the waters south of

60 degrees south latitude as an Antarctic Special Area¹⁶ under MARPOL, for annex I (Prevention and control of pollution by oil),¹⁷ annex II (Noxious liquid substances)¹⁸ and annex V (Garbage from ships).¹⁹ In addition, an amendment to MARPOL annex I prohibited the carriage and use of heavy fuel oils in Antarctic waters.²⁰ Moreover, under the Antarctic Treaty System,²¹ much stricter environmental standards for vessel wastewater and garbage (including food waste) discharge were put in place for the Antarctic.²² Beginning in the 2000s, some of the regulatory focus shifted to the Arctic and in 2002, IMO approved voluntary “Guidelines for ships operating in Arctic ice-covered waters” (IMO, 2002). These provide requirements additional to those already contained in SOLAS and MARPOL, taking into account the specific climatic conditions in Arctic waters, in order to meet appropriate standards of maritime safety and pollution prevention. With scientific findings increasingly suggesting a greater potential for commercial shipping through newly opened shipping lanes, in December 2009 voluntary guidelines for ships operating in polar waters were adopted, applicable to both Arctic and Antarctic areas (IMO, 2009). In February 2010, work commenced at IMO to turn these guidelines into a legally binding instrument (the Polar Code) that would help ensure environmental protection and foster the sustainable development of shipping in polar waters both in the Arctic and the Antarctic.

Key features of the Polar Code

As stated in its introduction, the goal of the Polar Code is to “provide for safe ship operation and the protection of the polar environment by addressing risks present in polar waters and not adequately mitigated by other instruments of the IMO”. The Code acknowledges that polar water operation may impose additional demands on ships, their systems and their operation, beyond existing requirements of SOLAS, MARPOL and other relevant binding IMO instruments. It also acknowledges that “while Arctic and Antarctic waters have similarities, there are also significant differences. Hence, although the Code is intended to apply as a whole to both Arctic and Antarctic, the legal and geographical differences between the two areas have been taken into account”.²³

The Polar Code consists of two substantive parts dealing, respectively, with safety (part I) and pollution prevention (part II), together with an introduction which contains mandatory provisions applicable to both parts I and II. Mandatory provisions on safety measures are set out in part I-A, while related recommendations are set out

in part I-B. Mandatory provisions on pollution prevention are contained in part II-A, again supplemented by related recommendations, set out in part II-B.

Part I-A of the Polar Code, entitled “Safety measures”, includes chapters on: general issues; polar water operational manuals; ship structure; subdivision and stability; watertight and weathertight integrity; machinery installations; fire safety and protection; life-saving appliances and arrangements; safety of navigation; communication; voyage planning; staffing and training. Each of these chapters sets out goals, functional requirements and relevant regulations. Part I-B establishes “Additional guidance regarding the provisions of the introduction and part I-A”.

Part II-A of the Polar Code, entitled “Pollution prevention measures” includes chapters on: prevention of oil pollution; control of pollution from noxious liquid substances in bulk; prevention of pollution by harmful substances carried by sea in packaged form; prevention of pollution by sewage from ships; and prevention of pollution by garbage from ships. Part II-B contains “Additional guidance to part II”, including also guidance on other environmental conventions and guidelines, more specifically related to ballast water management and anti-fouling coatings.

The Polar Code will apply to passenger ships and cargo ships of 500 GT and above, and covers the full range of shipping-related matters relevant to navigation in waters surrounding the two poles. It will require ships intending to operate in Arctic and Antarctic waters to undergo an assessment, taking into account the anticipated range of operating conditions and hazards the ship may encounter in the polar waters, and apply for a Polar Ship Certificate, which would classify the vessel according to the categories below:

- Category A ship: Designed for operation in at least medium first-year ice which may contain old ice inclusions (polar class 1 to 5 or equivalent);
- Category B ship: Designed for operation in at least thin first-year ice which may contain old ice inclusions (polar class 6 and 7 or equivalent);
- Category C ship: Designed for operation in open water or in ice conditions less severe than those in categories A and B.

Ships will also need to carry a Polar Water Operational Manual to provide the owner, operator, master and crew with sufficient information regarding the ship’s operational capabilities and limitations to support their decision-making process.

Key elements of part II of the Code regarding environmental issues include:

- Discharge into the sea of oil or oily mixtures from any ship is prohibited. Oil fuel tanks must be separated from outer shells;
- Discharge into the sea of noxious liquid substances, or mixtures containing such substances, is prohibited;
- Discharge of sewage is prohibited unless performed in line with MARPOL annex IV and requirements in the Polar Code;
- Discharge of garbage is restricted and only permitted in accordance with MARPOL annex V and requirements in the Polar Code.

In addition, some non-mandatory guidance is provided regarding measures to address, inter alia, potential threats from invasive species introduced via ballast water discharges²⁴ or through hull fouling (part II-B).

Part II does not appear to provide significant additional protection for Antarctic waters because there are already a number of regulations in place that prohibit the discharge of oil, noxious liquids and various forms of garbage in those waters. It will, however, improve the protection of Arctic waters from the discharge of these wastes, bringing the requirements for Arctic waters more in line with the existing protections in place for Antarctic waters.

B. REGULATORY DEVELOPMENTS RELATING TO THE REDUCTION OF GREENHOUSE GAS EMISSIONS FROM INTERNATIONAL SHIPPING AND OTHER ENVIRONMENTAL ISSUES

1. Reduction of greenhouse gas emissions from international shipping and energy efficiency

During the sixty-seventh and sixty-eighth sessions of MEPC,²⁵ States continued to focus on the reduction of CO₂ emissions from international shipping, including through improving ships' design and size, better speed management, and other operational measures, to reduce ships' consumption of fuel. The issue of possible market-based measures for the reduction

of GHG emissions from international shipping was not addressed, as further discussions on this had been postponed to a future session.²⁶ It should be recalled that a new set of technical and operational measures to increase energy efficiency and reduce emissions of GHGs from international shipping had been adopted in 2012 (IMO, 2011, annex 19).²⁷ This package of measures, introducing the EEDI for new ships and the SEEMP for all ships, was added by way of amendments to MARPOL annex VI through the introduction of a new chapter 4 entitled "Regulations on energy efficiency for ships", which entered into force on 1 January 2013. Guidelines and unified interpretations to assist in the implementation of this set of technical and operational measures were subsequently adopted at IMO in 2012, 2013 and 2014. In addition, a "Resolution on promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships" was adopted in May 2013, and a new study to provide an update to the IMO 2009 GHG emissions estimate for international shipping was completed in 2014. Information about relevant deliberations and outcomes during the sixty-seventh and sixty-eighth sessions of MEPC is presented below.

Reduction of greenhouse gas emissions from international shipping

An important development during the sixty-seventh session of MEPC was the approval of the third IMO GHG study 2014 (IMO, 2014a). The study provides updates to earlier estimates for GHG emissions from ships contained in the second IMO GHG study (2009). The third IMO GHG study estimates that international shipping emitted 796 million tons of CO₂ in 2012, compared to 885 million tons in 2007. This represented 2.2 per cent of the global emissions of CO₂ in 2012, compared to 2.8 per cent in 2007.²⁸

The main findings of the study as regards scenarios for 2012–2050 include the following:

- Maritime CO₂ emissions are projected to increase significantly. Depending on future economic and energy-related developments, this study's "business as usual" scenarios project an increase by 50 to 250 per cent in the period to 2050. Further action on efficiency and emissions can mitigate the emissions growth, although all scenarios but one project emissions in 2050 to be higher than in 2012;

- Among the different cargo categories, demand for transport of unitized cargoes is projected to increase most rapidly in all scenarios;
- Emission projections demonstrate that improvements in fuel efficiency are important to mitigate emission increases. However, even modelled improvements with the greatest energy savings do not yield a downward trend. Compared to regulatory or market-driven improvements in efficiency, changes in the fuel mix have a limited impact on GHG emissions, assuming that fossil fuels remain dominant;
- Most other emissions increase in parallel with CO₂ and fuel, with some notable exceptions. Methane emissions are projected to increase rapidly (albeit from a low base) as the share of LNG in the fuel mix increases. Emissions of NO_x may increase at a lower rate than CO₂ emissions as a result of tier II and tier III engines entering the fleet. Emissions of PM show an absolute decrease until 2020, and SO_x continue to decline through 2050, mainly because of MARPOL annex VI requirements on the sulphur content of fuels.

At its sixty-eighth session, MEPC considered a submission from one member State calling for a quantifiable reduction target for GHG emissions from international shipping, consistent with keeping global warming below 1.5°C, and for agreement on the measures necessary to reach that target (IMO, 2015a, annex 25).²⁹ During the discussion, speakers acknowledged the importance of the issue raised and of the establishment of emissions reporting for international shipping as a matter of priority. They also recognized that, despite the measures already taken by IMO regarding the reduction of emissions from ships, more could be done. However, MEPC took the view that the priority at this stage should be to continue its current work, in particular to focus on further reduction of emissions from ships through the finalization of a data collection system for fuel consumption.

Energy efficiency for ships

MEPC continued its work on further developing guidelines to assist member States in the implementation of the mandatory energy-efficiency regulations for international shipping. At its sixty-seventh and sixty-eighth sessions, MEPC in particular adopted:

- “2014 Guidelines on survey and certification of the Energy Efficiency Design Index” (IMO, 2014b, annex 5);³⁰
- “Amendments to the 2013 Interim Guidelines for determining minimum propulsion power to maintain the manoeuvrability of ships in adverse conditions” (IMO, 2014b, annex 6);³¹
- “Amendments to the 2014 Guidelines on survey and certification of the Energy Efficiency Design Index” (IMO, 2015a, annex 6), and endorsed their application from 1 September 2015, at the same time encouraging earlier application;
- “Amendments to the 2013 Interim Guidelines for determining minimum propulsion power to maintain the manoeuvrability of ships in adverse conditions” (IMO, 2015a, annex 7);³²
- “Amendments to the 2014 Guidelines on the method of calculation of the attained EEDI for new ships” (IMO, 2015a, annex 8).

MEPC also considered a progress report from the intersessional correspondence group established at its previous session to review the status of technological developments relevant to implementing phase 2 of the EEDI regulations³³ and re-established the correspondence group to further the work and submit an interim report to the sixty-ninth session of MEPC.

Further technical and operational measures for enhancing the energy efficiency of international shipping

In respect of a proposed data collection system for the fuel consumption of ships, which could be used, inter alia, to estimate CO₂ emissions, MEPC at its sixty-eighth session agreed that text prepared by the intersessional correspondence group³⁴ should be further developed in the form of full language for the data collection system, which could be readily used for voluntary or mandatory application of the system. The core elements of the data collection system include data collection by ships, functions of flag States in relation to data collection and the establishment of a centralized database by IMO. According to the proposed text, data would be collected for ships of 5,000 GT and above and include the ship identification number, technical characteristics, total annual fuel consumption by fuel type and in metric tons, and transport work and/or proxy data yet to be defined. The methodology for collecting the data would be outlined in the ship-specific SEEMP. Data, aggregated into an annual figure, would be reported by the shipowner/operator to the administration (flag State), which would submit the data to IMO for inclusion in a database, with access restricted to member States

only, and with data anonymized to the extent that the identification of a specific ship would not be possible.

MEPC noted that one purpose of the data collection system was to analyze energy efficiency, and for this analysis to be effective some transport work data needed to be included. However, at this stage the appropriate parameters have not been identified. MEPC recommended that an intersessional working group be held to further consider transport work and/or proxies for inclusion in the data collection system, further consider the issue of confidentiality, and consider the development of guidelines identified in the text.

Matters concerning the United Nations Framework Convention on Climate Change

MEPC noted a document on the outcomes of the United Nations Climate Change Conferences held in Lima in December 2014 and in Geneva in February 2015 (IMO, 2015b). It requested the IMO secretariat to continue its cooperation with the UNFCCC secretariat, and to bring the outcome of the work of IMO to the attention of appropriate UNFCCC bodies and meetings, as necessary.

2. Ship-source pollution and protection of the environment

(a) Air pollution from ships

MEPC continued its work on developing regulations to reduce emissions of other toxic substances from burning fuel oil, particularly NO_x and SO_x. Together with CO₂, these significantly contribute to air pollution from ships, and are covered by annex VI of MARPOL,³⁵ amended in 2008 to introduce more stringent emission controls.

During its sixty-eighth session, MEPC considered a number of amendments to existing guidance and other issues related to air pollution measures, and:

- Adopted “2015 Guidelines for exhaust gas cleaning systems” (IMO, 2015a, annex 1). These relate to certain aspects of emission testing regarding measurements of CO₂ and SO₂, clarification of the wash water discharge pH limit testing criteria, and the inclusion of a calculation-based methodology for verification as an alternative to the use of actual measurements;
- Approved the Bond et al.³⁶ definition of black carbon for international shipping as a distinct type of carbonaceous material formed only in flames

during combustion of carbon-based fuels. It is distinguishable from other forms of carbon and carbon compounds contained in atmospheric aerosol because of its unique combination and physical properties.

MEPC also noted that it was not possible at this stage to consider possible control measures to reduce the impact on the Arctic of emissions of black carbon from international shipping.³⁷

Emissions of nitrogen oxides

As highlighted in previous issues of the *Review of Maritime Transport*, measures have been adopted at IMO that require ships to gradually produce NO_x emissions below the tier III level. Tier III limits are almost 70 per cent lower than those of the preceding tier II, thus requiring additional technology. During its sixty-seventh and sixty-eighth sessions, MEPC continued its consideration of issues related to progressive reductions in NO_x emissions from ship engines, and in particular:

- Adopted amendments to MARPOL annex VI (IMO, 2014b, annex 9), concerning regulation 2 (definitions), regulation 13 (NO_x) and the Supplement to the International Air Pollution Prevention Certificate, in order to include reference to gas as fuel and to gas-fuelled engines. These are expected to enter into force on 1 March 2016;
- Approved draft amendments to the NO_x Technical Code 2008 (testing of gas-fuelled engines and dual-fuel engines for the NO_x tier III strategy) (IMO, 2014b, annex 3);
- Approved draft amendments to MARPOL annex VI (record requirements for operational compliance with NO_x tier III ECAs) (IMO, 2014b, annex 4);
- Approved guidance on the application of regulation 13 of MARPOL annex VI tier III requirements to dual-fuel and gas-fuelled engines (IMO, 2015c);
- Adopted amendments to the 2011 guidelines addressing additional aspects of the NO_x technical code 2008 with regard to particular requirements related to marine diesel engines fitted with selective catalytic reduction systems (IMO, 2015a, annex 2);
- Agreed, for consistency and safety reasons, to proceed with the development of guidelines for the sampling and verification of fuel oil used on board ships.

Thus, tier III standards will apply to a marine diesel engine that is installed on a ship constructed on or after 1 January 2016 and which operates in the North American ECA or the United States Caribbean Sea ECA that are designated for the control of NO_x emissions. In addition, tier III standards will apply to installed marine diesel engines when operated in other ECAs that might be designated in the future for tier III NO_x control. They will apply to ships constructed on or after the date of adoption by MEPC of such an ECA, or a later date as may be specified in the amendment designating the NO_x tier III ECA.³⁸ Furthermore, tier III requirements will not apply to a marine diesel engine installed on a ship constructed prior to 1 January 2021 of less than 500 GT, of 24 metres or over in length, which has been specifically designed and is used solely for recreational purposes. These amendments are expected to enter into force on 1 September 2015. Requirements for the control of NO_x apply to installed marine diesel engines of over 130 kilowatt output power, and different levels (tiers) of control apply based on a ship's construction date. Outside ECAs designated for NO_x control, tier II controls, required for marine diesel engines installed on ships constructed on or after 1 January 2011, apply. While IMO tier III standards will come into force for ships constructed from 1 January 2016 onwards, it has been noted that retrofitting existing vessels with tier III technology, where possible, could significantly enhance fuel efficiency for existing fleets, thus reducing both emissions and operational costs (*The Ship Supplier*, 2014).

Sulphur oxide emissions

As reported in previous editions of the *Review of Maritime Transport*, with effect from 1 January 2012, MARPOL annex VI established reduced SO_x thresholds for marine bunker fuels, with the global sulphur cap reduced from 4.5 per cent (45,000 parts per million (ppm)) to 3.5 per cent (35,000 ppm), outside an ECA. The global sulphur cap is expected to be reduced further to 0.5 per cent (5,000 ppm) from 2020. Depending on the outcome of a review, to be completed by 2018, as to the availability of compliant fuel oil, this requirement could be deferred to 1 January 2025. Within ECAs where more stringent controls on sulphur emissions apply, the sulphur content of fuel oil must be no more than 1 per cent, falling to 0.1 per cent (1,000 ppm) from 1 January 2015.³⁹

To meet these new guidelines, shipowners and operators are adopting a variety of strategies. These include switching to low-sulphur fuels, installing

scrubbers and switching to LNG as fuel. However, implementing these strategies may be costly. For instance, the supply of low-sulphur marine gas oil remains a concern, and other distillate alternatives available are expensive. Installing scrubbers or exhaust gas SO_x cleaning systems on ships may cost \$3 million–\$5 million per scrubber, and LNG retrofitting is very expensive and not always feasible. Operators therefore risk being fined for breaching emission restrictions and some of them may, in the short term, choose to accept this situation (*IHS Maritime Technology*, 2014).

The 2010 guidelines for monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships (IMO, 2010, annex I) provide for the calculation of a rolling average of the sulphur content for a three-year period. The rolling average based on the average sulphur contents calculated for the years 2012–2014 is 2.47 per cent for residual fuel and 0.13 per cent for distillate fuel (IMO, 2013, 2014c and 2015d).

At its sixty-eighth session, MEPC agreed that the IMO secretariat should initiate in 2015 a review of the availability of compliant fuel oil to meet the global requirement that the sulphur content of fuel oil used on board ships shall not exceed 0.50 per cent as from 1 January 2020.⁴⁰ The fuel oil availability review will be overseen by a steering committee⁴¹ and a final report will be submitted to the seventieth session of MEPC in autumn 2016.

In addition, MEPC considered the report of a correspondence group established to consider possible quality control measures prior to fuel oil being delivered to a ship, and re-established it to further develop draft guidance on best practices for assuring the quality of fuel oil delivered for use on board ships; further examine the adequacy of the current legal framework in MARPOL annex VI for assuring the quality of fuel oil for use on board ships; and submit a report to the sixty-ninth session of MEPC.⁴²

Other issues

During its sixty-seventh and sixty-eighth sessions, MEPC adopted the following amendments that are expected to enter into force on 1 March 2016:

- Amendments to MARPOL annex I (IMO, 2014b, annex 7) concerning regulation 43 on special requirements for the use or carriage of oils in the Antarctic area, and prohibiting ships from carrying heavy grade oil on board as ballast;

- Amendments to MARPOL annex III (IMO, 2014b, annex 8) concerning the appendix on criteria for the identification of harmful substances in packaged form.

MEPC also:

- Approved two sets of guidelines to assist in oil spill response, developed by the Subcommittee on Pollution Prevention and Response:
 - “Guidelines on international offers of assistance in response to a marine oil pollution incident” (IMO, 2015e, annex 13);⁴³
 - “Guidelines for the use of dispersants for combating oil pollution at sea – Part III (Operational and technical sheets for surface application of dispersants)” (IMO, 2015e, annex 14).⁴⁴
- Adopted “Amendments to regulation 12 of MARPOL annex I, concerning tanks for oil residues (sludge)” (IMO, 2014d). These expand on the requirements for discharge connections and piping to ensure oil residues are properly disposed of.

(b) Ballast water management

One of the major threats to biodiversity is the introduction of non-native species following the discharge of untreated ships’ ballast water. Indeed, the introduction of harmful aquatic organisms and pathogens to new environments has been identified as one of the four greatest threats to the world’s oceans.⁴⁵ Even though ballast water is essential to ensure safe operating conditions and stability for vessels at sea, it often carries with it a multitude of marine species, which may survive to establish a reproductive population in the host environment – becoming invasive, out-competing native species and multiplying into pest proportions. The proliferation of bioinvasions continues to increase in conjunction with the growth of seaborne trade, as approximately 10 billion tons of ballast water per year are transferred globally, with potentially devastating consequences. In February 2004, the International Convention for the Control and Management of Ships’ Ballast Water and Sediments (BWM Convention) was adopted under the auspices of IMO to prevent, minimize and ultimately eliminate the risks to the environment, human health, property and resources arising from the transfer of harmful aquatic organisms carried by ships’ ballast water from one region to another (for a review, see UNCTAD, 2011b).

During its sixty-seventh and sixty-eighth sessions, MEPC agreed to grant basic approval to six,⁴⁶ and final approval to four,⁴⁷ ballast water management systems that make use of active substances. In addition, at both sessions MEPC reviewed the status of the BWM Convention, which is close to fulfilling the remaining criteria (tonnage) for its entry into force. The Convention is set to enter into force twelve months after the date on which no fewer than 30 States, the combined merchant fleets of which constitute not less than 35 per cent of the GT of world merchant shipping, have become Parties to it. As of 30 June 2015, 44 States, representing 32.86 per cent of the world’s merchant fleet GT, had become parties.⁴⁸

MEPC also:

- Adopted “Resolution MEPC.252(67) on guidelines for port State control under the BWM Convention” (IMO, 2014b, annex 1);
- Adopted a “Plan of action for reviewing the guidelines for approval of ballast water management systems (G8)” (IMO, 2014b, annex 2);
- Adopted “Resolution MEPC.253(67) on measures to be taken to facilitate entry into force of the BWM Convention” (IMO, 2014b, annex 3);⁴⁹
- Agreed on a “Road map for the implementation of the BWM Convention” (IMO, 2014e, annex 2). This explains that ships that install ballast water management systems approved in accordance with the current guidelines (G8), (“early movers”), should not be penalized;
- Developed “Draft amendments to regulation B-3 of the BWM Convention to reflect Assembly resolution A.1088(28) on application of the Convention”, with a view to approval at the sixty-ninth session and consideration for adoption once the treaty enters into force. These will provide an appropriate timeline for ships to comply with the ballast water performance standard prescribed in regulation D-2 of the Convention;
- Received a progress report on a study on the implementation of the ballast water performance standard described in regulation D-2 of the Convention (IMO, 2015f).⁵⁰

(c) Ship recycling

MEPC adopted the “2015 Guidelines for the development of the Inventory of Hazardous Materials” (IMO, 2015a, annex 17). The Inventory is required under the Hong Kong International Convention for the

Safe and Environmentally Sound Recycling of Ships, 2009 (Hong Kong Convention). The Convention is not yet in force and at 30 June 2015 only three States had ratified it. The Convention requires ratification by not less than 15 States to enter into force.

(d) Developments regarding the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996, as amended by its 2010 Protocol

The issue of the entry into force of the 2010 HNS Convention was discussed by the Legal Committee of IMO at its 102nd session in April 2015. In particular, the mandate of the HNS Correspondence Group was extended to develop a publication entitled *Understanding the HNS Convention*,⁵¹ another document entitled *HNS Scenarios* and a Legal Committee resolution that would help encourage States to implement the HNS Convention and take the necessary steps to bring it into force within a reasonable time.⁵² As reported in previous editions of the *Review of Maritime Transport*, the HNS Convention, originally adopted in 1996, was amended in 2010 in an effort to overcome a number of perceived obstacles to ratification. However, despite the recognized importance of an international liability and compensation regime for HNS carried by sea (UNCTAD, 2012a), to date no State has ratified the HNS Convention as amended in 2010. As a result, it is not clear if and when the 2010 HNS Convention will enter into force and an important gap in the global liability and compensation framework remains.⁵³ It may be recalled that a comprehensive and robust international liability and compensation regime is in place in respect of oil pollution from tankers (the International Oil Pollution Compensation Fund regime),⁵⁴ while liability and compensation for bunker oil pollution from ships other than tankers is also effectively regulated in the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (Bunker Oil Pollution Convention).

(e) Liability and compensation for transboundary pollution damage resulting from offshore oil exploration and exploitation

It should be noted that the need for international regulation to provide for liability and compensation for transboundary pollution damage resulting from

offshore exploration and exploitation activities was again considered by the IMO Legal Committee at its 102nd session. However, following discussion, the Legal Committee decided that there was currently no compelling need to develop an international convention and, as already agreed at its previous sessions, guidance on bilateral or regional agreements should continue to be developed (IMO, 2015g).

Offshore oil exploration poses particular technical, safety and operational challenges, which are increased in areas prone to earthquakes. Associated oil pollution incidents may have potentially devastating consequences, both in terms of economic loss and in terms of effects on marine biodiversity and ecosystem health, in particular in sensitive marine environments like the Arctic. While offshore oil exploration and exploitation is expected to grow in the future,⁵⁵ at present there is no international legal instrument to provide for liability and compensation in cases of accidental or operational oil spills.

With respect to liability and compensation for oil pollution from offshore platforms, recent developments related to the Deepwater Horizon disaster, one of the largest accidental marine oil spills in the world and the largest environmental disaster in United States history, are also worth noting. The disaster, which occurred in the Gulf of Mexico about 40 miles south-east of the Louisiana coast on 20 April 2010, was a result of the explosion, sinking of and subsequent massive oil spill from the Deepwater Horizon drilling rig, owned and operated by the company Transocean and drilling for British Petroleum (BP). The explosion killed 11 workers, injured 16 others and the total discharge was estimated at 4.9 million barrels (210 million United States gallons; 780,000 cubic metres).⁵⁶ In June 2015, more than five years after the disaster, BP's \$18.7 billion settlement with various United States Government agencies of claims resulting from the explosion was announced. This was reportedly in addition to \$29.1 billion in costs associated with the initial and ongoing clean-up operations and the settlement of civil claims brought by businesses damaged by the oil spill, bringing the final bill to approximately \$50 billion.⁵⁷

Key developments in summary

As the above overview indicates, during the year under review there were a number of regulatory initiatives and developments aimed at implementing sustainable development objectives and policies. These include, notably, the adoption of the Polar Code, which establishes mandatory provisions to

ensure ship safety and prevent environmental pollution in both Arctic and Antarctic waters. The Polar Code is expected to enter into force on 1 January 2017. In addition, the third IMO GHG study was finalized, providing an updated estimate of CO₂ emissions from international shipping over the period 2012–2050, and several regulatory measures were adopted at IMO to strengthen the legal framework relating to ship-source air pollution and the reduction of GHG emissions from international shipping. Guidelines for the development of the Inventory of Hazardous Materials, required under the 2010 HNS Convention, were adopted, and further progress was made with respect to technical matters related to the implementation of the 2004 BWM Convention and the 2009 Ship Recycling Convention. Following the decision of the IMO Legal Committee that there was no compelling need to develop an international convention, the important issue of liability and compensation for transboundary pollution resulting from offshore oil exploration and exploitation remains, for the time being, outside the ambit of international regulation.

C. OTHER LEGAL AND REGULATORY DEVELOPMENTS AFFECTING TRANSPORTATION

This section highlights some key issues in the field of maritime security and safety that may be of particular interest to parties engaged in international trade and transport. These include developments relating to maritime and supply chain security and maritime piracy.

1. Maritime and supply chain security

(a) World Customs Organization Framework of Standards to Secure and Facilitate Global Trade

As noted in previous editions of the *Review of Maritime Transport*, in 2005, WCO adopted the SAFE Framework with the objective of developing a global supply chain framework, while also recognizing the significance of a closer partnership between customs administrations and business. The SAFE Framework provides a set of standards and principles that must be adopted as a minimum threshold by national customs administrations, originally contained within two pillars: pillar 1, “Customs-to-customs network arrangements”, and pillar 2, “Customs–business

partnerships”.⁵⁸ The SAFE Framework is a widely accepted instrument that serves as an important reference point for customs and for economic operators alike and has evolved over the years as a dynamic instrument.⁵⁹ It was first updated in 2007 to incorporate detailed provisions on the conditions and requirements for customs and AEOs (a status that reliable traders may be granted and that entails benefits in terms of trade-facilitation measures). In 2010, a SAFE Package was issued, which brought together all WCO instruments and guidelines that support implementation of the SAFE Framework, and in June 2012 a revised version of the SAFE Framework included new parts 5 and 6 in respect of coordinated border management and trade continuity and resumption. A new annex I for definitions, including definition of “high risk cargo”, was also added.⁶⁰

A revised version of the SAFE Framework was issued in June 2015 that includes a new pillar 3, “Customs-to-other government and inter-government agencies”, aiming to foster closer cooperation between customs administrations and other government agencies involved in the international trade supply chain (WCO, 2015a). Pillar 3 foresees cooperation at three levels: cooperation within a Government; cooperation between and among Governments; and multinational cooperation. Standards for each of these areas have been developed to promote such cooperation through a multi-tiered approach. A number of tools have been developed by WCO that support this pillar, notably the Compendiums on Coordinated Border Management and Single Window, which are continually updated. Another important aspect of this SAFE version is the incorporation of standards for “pre-loading advance cargo information” in respect of air cargo to carry out a first layer of security risk analysis together with civil aviation authorities. It also includes definitions of “container” and “risk management”. Furthermore, the instruments and tools related to risk management mentioned in technical specifications of standards 4 and 7 of pillar 1 and other relevant sections have been updated in view of the development of the WCO Risk Management Compendium, volumes 1 and 2.

An important feature of the SAFE Framework, AEOs⁶¹ are private parties that have been accredited by national customs administrations as compliant with WCO or equivalent supply chain security standards. AEOs have to meet special requirements in respect

of physical security of premises, hidden camera surveillance and selective staffing and recruitment policies. In return, AEOs are to be rewarded by way of trade-facilitation benefits, such as faster clearance of goods and fewer physical inspections. In recent years, a number of mutual recognition agreements (MRAs) of respective AEOs have been adopted by customs administrations, usually on a bilateral basis.⁶² However, it is hoped that these bilateral agreements will, in due course, form the basis for multilateral agreements at the subregional and regional levels. As of June 2015, 37 AEO programmes had been established in 64 countries⁶³ and a further 16 countries plan to establish them in the near future.⁶⁴ Capacity-building assistance remains a vital part of the SAFE implementation strategy. During 2014 and the first quarter of 2015, AEO workshops under the WCO Columbus Programme, or under specific financial support, were organized in a number of countries.⁶⁵

(b) Developments at the European Union level and in the United States

This subsection provides an update of developments in relation to existing maritime and supply chain security standards at the European Union level and in the United States, both important trade partners for many developing countries.

As regards the European Union, previous editions of the *Review of Maritime Transport* have provided information on the Security Amendment to the Community Customs Code,⁶⁶ which aims to ensure an equivalent level of protection through customs controls for all goods brought into or out of the European Union's customs territory.⁶⁷ Part of the changes to the Customs Code involved the development of common rules for customs risk management, including setting out common criteria for pre-arrival/pre-departure security risk analysis based on electronically submitted cargo information. From 1 January 2011, this advance electronic declaration of relevant security data has become an obligation for traders.⁶⁸

Among the changes to the Customs Code was the introduction of provisions regarding AEOs. In this context, subsequent related developments – such as the recommendation for self-assessment of economic operators to be submitted together with their applications for AEO certificates,⁶⁹ and the issuance of a revised self-assessment

questionnaire⁷⁰ to guarantee a uniform approach throughout all European Union member States – are also worth noting. The European Union has concluded six AEO MRAs with third countries, including major trading partners, and negotiations on another MRA are ongoing.⁷¹

The European Commission, on 21 August 2014, adopted a Communication on European Union Strategy and Action Plan for customs risk management: “Tackling risks, strengthening supply-chain security and facilitating trade” (European Commission, 2014a). The Strategy and Action Plan annexed to the Communication proposes a set of step-by-step actions to reach more coherent, effective and cost-efficient European Union customs risk management at the European Union's external borders (European Commission, 2014b).⁷²

As regards developments in the United States, according to the United States Customs and Border Protection (CBP), more than 11 million maritime containers arrive at United States seaports each year. At land borders, another 11 million arrive by truck and 2.7 million by rail.⁷³ Programmes such as the CSI and the Customs–Trade Partnership against Terrorism (C–TPAT), in which representatives of the trade community participate, help to increase the security of trade along supply chains.⁷⁴ Within months of the 11 September 2001 attacks, CSI was established to address the threat to border security and global trade posed by the potential for terrorist use of a maritime container to deliver a weapon. CSI aims to ensure all containers that pose a potential risk are identified and inspected at foreign ports before they are placed on ships destined for the United States. Teams of CBP officers are stationed in foreign locations to work together with their host foreign government counterparts, in order to target and pre-screen containers through “non-intrusive inspection” and radiation detection technology, as early in the supply chain and as rapidly as possible without slowing down trade. Since the inception of CSI, a significant number of customs administrations have joined the programme, and CSI is now operational at 58 ports in North America, Europe, Asia, Africa, the Middle East, and Latin and Central America, pre-screening over 80 per cent of all maritime containerized cargo imported into the United States.⁷⁵

Starting as a partnership in November 2001 with seven major importers from the United States

and neighbouring countries as members, the C-TPAT currently includes more than 10,000 certified partners from the trade community. When joining the C-TPAT, companies sign an agreement to work with CBP to protect the supply chain, identify security gaps and implement specific security measures and best practices. Additionally, partners provide CBP with a security profile outlining the specific security measures the companies have in place. C-TPAT members are considered low risk and are therefore less likely to be examined. C-TPAT signed its first MRA in June 2007 and since then has signed similar arrangements with nine countries/territories and the European Union.⁷⁶

As highlighted in the *Review of Maritime Transport 2009*, in January 2009 new requirements, known as the “10+2” rule, came into effect.⁷⁷ The rule requires both importers and carriers to submit additional information pertaining to cargo to CBP before the cargo is brought into the United States by vessel. Failure to comply with the rule could ultimately result in monetary penalties, increased inspections and delay of cargo.⁷⁸

Also worth mentioning are the voluntary Importer Self Assessment programme, in place since June 2002, which provides the opportunity for interested importers who are participating members of C-TPAT to assume responsibility for monitoring their own compliance in exchange for benefits;⁷⁹ the recent Trusted Trader programme, already in the test phase, which aims to join and unify the existing C-TPAT and Importer Self Assessment programmes to integrate and streamline the processes of supply chain security and trade compliance within one partnership programme;⁸⁰ and the Proliferation Security Initiative, which aims to stop trafficking of weapons of mass destruction, their delivery systems, and related materials to and from those State and non-State actors which may be of concern regarding arms proliferation. In February 2004, the Proliferation Security Initiative was expanded to include law enforcement cooperation, and to date more than 100 countries around the world have endorsed it.⁸¹

In addition, the United States has coordinated and supported other international initiatives, including the expansion of the WCO SAFE Framework, by providing targeted countries with training and advisory support through programmes on capacity-building and export control and border security.⁸²

(c) International Organization for Standardization

During the last decade, the International Organization for Standardization (ISO) has been actively engaged in matters of maritime transport and supply chain security. Shortly after the release of the International Ship and Port Facility Security Code (ISPS Code),⁸³ and to facilitate its implementation by the industry, the ISO technical committee ISO/TC 8 published ISO 20858:2007, “Ships and marine technology – Maritime port facility security assessments and security plan development”. Also relevant is the development of the ISO 28000 series of standards “Security management systems for the supply chain”, which are designed to help the industry successfully plan for, and recover from, any ongoing disruptive event (box 5.1 details the current status of the ISO 28000 series). The core standard in this series is ISO 28000:2007, “Specification for security management systems for the supply chain”, which serves as an umbrella management system that enhances all aspects of security – risk assessment, emergency preparedness, business continuity, sustainability, recovery, resilience and/or disaster management – whether relating to terrorism, piracy, cargo theft, fraud or many of the other security disruptions. The standard also serves as a basis for AEO and C-TPAT certifications. Various organizations adopting such standards may tailor an approach compatible with their existing operating systems. The standard ISO 28003:2007, published and in force since 2007, provides requirements for providing audits and certification to ISO 28000:2007.

The recent ISO 28007-1:2015, published in April 2015, cancels and replaces ISO/PAS 28007:2012 that provided guidelines containing additional sector-specific recommendations, which companies or organizations that comply with ISO 28000 can implement before they provide privately contracted armed security personnel on board ships. However, changes are minimal, consisting of matters of interpretation and guidance, not requirement or specification. The role of human rights has been clarified by reference to the United Nations Guiding Principles on Business and Human Rights. Greater emphasis has been put on the absolute priority to ensure flag State requirements are identified and met. The different concepts of “threat assessment” and “risk” have been clarified. The phrase “interested parties” has been replaced by “stakeholders” for textual consistency, and “reasonable and proportionate” has been replaced with “reasonable and necessary”.⁸⁴

Box 5.1. The current status of the ISO 28000 series of standards

Standards published:

- **ISO 28000:2007** – “Specification for security management systems for the supply chain”. This standard provides the overall “umbrella” standard. It is a generic, risk-based, certifiable standard for all organizations, all disruptions and all sectors. It is widely in use and constitutes a stepping stone to the AEO and C-TPAT certifications.
- **ISO 28001:2007** – “Security management systems for the supply chain – Best practices for implementing supply chain security, assessments and plans”. This standard is designed to assist the industry to meet the requirements for AEO status.
- **ISO 28002:2011** – “Security management systems for the supply chain – Development of resilience in the supply chain – Requirements with guidance for use”. This standard provides additional focus on resilience, and emphasizes the need for an ongoing, interactive process to prevent, respond to and assure continuation of an organization’s core operations after a major disruptive event.
- **ISO 28003:2007** – “Security management systems for the supply chain – Requirements for bodies providing audit and certification of supply chain security management systems”. This standard provides guidance for accreditation and certification bodies.
- **ISO 28004-1:2007** – “Security management systems for the supply chain – Guidelines for the implementation of ISO 28000 – Part 1: General principles”. This standard provides generic advice on the application of ISO 28000:2007. It explains the underlying principles of ISO 28000 and describes the intent, typical inputs, processes and typical outputs for each requirement of ISO 28000. The objective is to aid the understanding and implementation of ISO 28000. ISO 28004-1:2007 does not create additional requirements to those specified in ISO 28000, nor does it prescribe mandatory approaches to the implementation of ISO 28000.
- **ISO/PAS 28004-2:2014** – “Security management systems for the supply chain – Guidelines for the implementation of ISO 28000 – Part 2: Guidelines for adopting ISO 28000 for use in medium and small seaport operations”. This standard provides guidance to medium-sized and small ports that wish to adopt ISO 28000. It identifies supply chain risk and threat scenarios, procedures for conducting risk/threat assessments, and evaluation criteria for measuring conformance and effectiveness of the documented security plans in accordance with ISO 28000 and ISO 28004 implementation guidelines.
- **ISO/PAS 28004-3:2014** – “Security management systems for the supply chain – Guidelines for the implementation of ISO 28000 – Part 3: Additional specific guidance for adopting ISO 28000 for use by medium and small businesses (other than marine ports)”. This standard has been developed to supplement ISO 28004-1 by providing additional guidance to small and medium-sized businesses (other than marine ports) that wish to adopt ISO 28000. The additional guidance in ISO/PAS 28004-3:2012, while amplifying the general guidance provided in the main body of ISO 28004-1, does not conflict with the general guidance, nor does it amend ISO 28000.
- **ISO/PAS 28004-4:2014** – “Security management systems for the supply chain – Guidelines for the implementation of ISO 28000 – Part 4: Additional specific guidance on implementing ISO 28000 if compliance with ISO 28001 is a management objective”. This standard provides additional guidance for organizations adopting ISO 28000 that also wish to incorporate the best practices identified in ISO 28001 as a management objective in their international supply chains.
- **ISO 28005-1:2013** – “Security management systems for the supply chain – Electronic port clearance (EPC) – Part 1: Message structures”. This standard provides for computer-to-computer data transmission.
- **ISO 28005-2:2011** – “Security management systems for the supply chain – Electronic port clearance (EPC) – Part 2: Core data elements”. This standard contains technical specifications that facilitate efficient exchange of electronic information between ships and shore for coastal transit or port calls, as well as definitions of core data elements that cover all requirements for ship-to-shore and shore-to-ship reporting as defined in the ISPS Code, the IMO Facilitation Committee Convention and relevant IMO resolutions.
- **ISO/PAS 28007-1:2015** – “Ships and marine technology – Guidelines for private maritime security companies (PMSC) providing privately contracted armed security personnel on board ships (and pro forma contract) – Part 1: General”. This standard provides guidelines containing additional sector-specific recommendations, which companies (organizations) that comply with ISO 28000 can implement to demonstrate that they provide privately contracted armed security personnel on board ships.

Box 5.1. The current status of the ISO 28000 series of standards (continued)

- **ISO 20858:2007** – “Ships and marine technology – Maritime port facility security assessments and security plan development”. This standard establishes a framework to assist marine port facilities in specifying the competence of personnel to conduct a marine port facility security assessment and to develop a security plan as required by the ISPS Code. In addition, it establishes certain documentation requirements designed to ensure that the process used in performing the duties described above is recorded in a manner that permits independent verification by a qualified and authorized agency. It is not an objective of ISO 20858:2007 to set requirements for a contracting Government or designated authority in designating a recognized security organization, or to impose the use of an outside service provider or other third parties to perform the marine port facility security assessment or security plan if the port facility personnel possess the expertise outlined in the specification. Ship operators may be informed that marine port facilities that use this document meet an industry-determined level of compliance with the ISPS Code. ISO 20858:2007 does not address the requirements of the ISPS Code relative to port infrastructure that fall outside the security perimeter of a marine port facility that might affect the security of the facility–ship interface. Governments have a duty to protect their populations and infrastructures from marine incidents occurring outside their marine port facilities. These duties are outside the scope of ISO 20858:2007.

Standards under development:

- ISO 28006 – “Security management systems for the supply chain – Security management of [roll-on roll-off] RO-RO passenger ferries”. This standard will include best practices for the application of security measures.

Note: For more information, including on the procedure for preparing international standards at ISO, see www.iso.org.

2. Combating maritime piracy and armed robbery

At a basic level, maritime piracy is a maritime transport issue that directly affects ships, ports, terminals, cargo and seafarers. However, as piracy activities evolve and become more sophisticated, the problem becomes a multifaceted and complex transnational security challenge that threatens lives, livelihoods and global welfare. As highlighted in some detail in a recent two-part report on maritime piracy prepared by UNCTAD, piracy has broad repercussions, including for humanitarian aid, supply chains, global production processes, trade, energy security, fisheries, marine resources, the environment and political stability (UNCTAD 2014b, 2014c). The resulting adverse and potentially destabilizing effects entail far-reaching implications for all countries, whether they are coastal or landlocked, developed or developing. Addressing the challenge of piracy in an effective manner requires strong cooperation at the political, economic, legal, diplomatic and military levels, as well as collaboration between diverse public and private sector stakeholders across regions.

At IMO, MSC at its ninety-fourth session (17–21 November 2014) welcomed the continuing positive developments in the suppression of piracy and armed robbery in the waters off the coast of Somalia and the wider western Indian Ocean, but remained concerned

about the seafarers still being held hostage. It also noted the downward trend of attacks in the Gulf of Guinea, indicating that international, regional and national efforts were beginning to take effect, and reiterated the importance of reporting incidents by flag States and industry organizations.⁸⁵

MSC noted the work of the Maritime Trade Information Sharing Centre,⁸⁶ now operational on a trial basis with over 500 ships per month reporting to it. The work of the Maritime Trade Information Sharing Centre is complementary to that of the Interregional Coordination Centre in Yaoundé. The latter provides for cooperation, coordination and communication in the implementation⁸⁷ of the Code of Conduct concerning the repression of piracy, armed robbery against ships and illicit maritime activity in West and Central Africa⁸⁸ at the strategic level, while the Maritime Trade Information Sharing Centre handles civilian information exchange and maritime situational awareness aspects.⁸⁹ MSC expressed its appreciation for the contributions received for the IMO West and Central Africa Maritime Security Trust Fund,⁹⁰ and called on member States to further support the implementation of IMO projects on maritime security for West and Central Africa by financially contributing to the Trust Fund.

With respect to piracy off the coast of Somalia, MSC noted United Nations Security Council resolution 2184 on the situation in Somalia, adopted on 12 November

2014, which, among others, recognized the contribution of IMO and renewed its call upon States to deploy naval vessels to the area, and underlined the primary responsibility of Somali authorities in the fight against piracy and armed robbery off the country's coast (United Nations, 2014a). MSC also welcomed the fact that the European Union Naval Force and North Atlantic Treaty Organization mandates had been extended to the end of 2016, and reiterated the importance of continuing to implement diligently the IMO guidance and best management practices.⁹¹

As regards the situation of piracy and armed robbery against ships in Asia for the period January to June 2014, MSC noted a document providing an update on the activities carried out by the Information Sharing Centre of the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia, and including the action taken by some of its members with respect to those found to be responsible for fuel siphoning cases that had been widely reported in the media (IMO, 2014f).⁹²

MSC also noted United Nations Security Council resolution 2182 on the situation in Somalia and Eritrea, adopted on 24 October 2014, highlighting the need to prevent unauthorized deliveries of weapons and military equipment to Somalia and to prevent the direct or indirect export of charcoal from Somalia (United Nations, 2014b). Some of its provisions, particularly operative paragraph 10 in relation to weapons on board vessels engaged in commercial activity in Somali ports, and operative paragraphs 11 to 22 referring to the maritime interdiction of charcoal and arms, may have an impact on the shipping industry. Implications may also arise from paragraphs 15 and 16, dealing specifically with inspections by member States, acting nationally or through voluntary multinational naval partnerships, of merchant ships that they have reasonable grounds to believe are carrying charcoal or weapons in violation of the ban and/or embargo.

MSC at its ninety-fifth session approved:

- “Recommendations to Governments for preventing and suppressing piracy and armed robbery against ships”, which incorporates a provision on the establishment of a national point of contact for communication of information on piracy and armed robbery to IMO (IMO, 2015h);
- “Best management practices for protection against Somalia-based piracy” (IMO, 2015i);

- “Revised interim recommendations for flag States regarding the use of privately contracted armed security personnel on board ships in the high risk area”, which includes amendments related to certification of private maritime security companies to address publication of ISO 28007 (IMO, 2015j).

The Legal Committee at its 102nd session considered a document by the secretariat (IMO, 2015k) reporting on the outcome of discussions by members of the Kampala Process⁹³ at a meeting led by IMO, with the support of EUCAP Nestor⁹⁴ and the United Nations Office on Drugs and Crime, held in Addis Ababa in September 2014. The Committee was also informed⁹⁵ of the current status of the secretariat's counter-piracy initiatives.⁹⁶

3. Seafarers' issues

Shipping and related activities are expected to continue to provide important opportunities for employment in developing countries, thus contributing to achieving sustainable development goals. According to ILO estimates, over 1.5 million people around the world are employed as seafarers, the vast majority of whom come from developing countries.⁹⁷ Protecting their welfare and establishing internationally agreed standards, including on their working conditions and necessary training, is critical, not only for the seafarers themselves, but also for the ability of the global shipping industry to operate ships safely and in an environmentally responsible manner.

The most important and comprehensive international instrument negotiated at ILO, the MLC 2006, which consolidates and updates more than 68 international labour standards relating to seafarers, and sets out their responsibilities and rights with regard to labour and social matters in the maritime sector, entered into force on 20 August 2013. It currently has 65 member States, representing over 80 per cent of the world's global shipping tonnage, and is considered as the fourth pillar of the global maritime regulatory regime. Therefore, the review of the implementation of the MLC on a regular basis, as well as consultations regarding any necessary updates to it, are very important. Worth noting are the 2014 amendments to the MLC aimed at ensuring that adequate financial security is provided by flag States to cover the costs of abandonment of seafarers as well as claims for death and long-term disability due to occupational injury and hazards, thus providing relief to seafarers and their families and improving the quality of shipping overall. These amendments, which were summarized in the

Review of Maritime Transport 2014, were approved by the International Labour Conference held in June 2014 (UNCTAD, 2014a, pages 89–90).

(a) International Labour Organization Convention No. 185 on Seafarers' Identity Documents (Revised) 2003

Convention No.185 specifically relates to the issuance and recognition of the seafarers' identity document (SID) which facilitates the temporary admission of seafarers to foreign territory, for the purposes of their well-being while in port, accessing onshore welfare facilities or taking shore leave, and for transit through a country related to the operation of ships.⁹⁸ A SID can only be issued and verified by a seafarer's country of nationality. Although SIDs are not considered travel documents per se (such as, for example, passports or visas), their issuance may be subject to the same conditions as prescribed by national laws for travel documents.

Convention No. 185, adopted in June 2003 to replace the earlier Convention No. 108, included innovations that related to the introduction of modern security features at the time, for the new SID and its biometric features (fingerprint template and photograph), as well as features facilitating verification of the SID (uniformity and machine readability). Convention No. 185 also contains minimum requirements for SID issuance processes and procedures, including quality control, national databases and national focal points to provide information to border authorities.

Although the Convention entered into force in February 2005, only 30 out of 185 ILO member States have ratified it or provisionally applied it to date, and this number includes few port States. Thus, those countries that have made considerable investments to properly implement this Convention can count on only a few countries to recognize the SIDs issued under it. Also, only a few countries that have ratified the Convention are in a position to actually issue SIDs conforming to it. Implementation efforts are mainly hampered by the fact that the fingerprint technology and biometric features required in annex I of Convention No. 185 are already considered to be out of date, and are not used by the border authorities of many of the countries concerned. Instead, since 2003, many of these countries have been using the International Civil Aviation Organization standards for travel documents, which are exclusively based on the facial image in a contactless chip as the biometric feature, rather than a fingerprint template in a two-dimensional barcode.

After careful consideration of these matters, participants at the Tripartite Meeting of Experts concluded that the only feasible way forward would be for the 2016 International Labour Conference to amend annex I to Convention No. 185, and as necessary other annexes, to align the biometric requirements under this Convention with those of the International Civil Aviation Organization that are universally followed for travel and similar documents. However, a suitable transition period would be allowed for countries that are already implementing Convention No. 185.⁹⁹

(b) Fair treatment of seafarers in the event of a maritime accident

The Legal Committee at its 102nd session considered the outcome of a survey concerning implementation of the 2006 Guidelines on the Fair Treatment of Seafarers in the Event of a Maritime Accident, and a further analysis of the responses to this survey (IMO, 2015l).¹⁰⁰ The survey indicated the following:

- Thirteen member States (29 per cent of the respondents) stated that their existing laws already adequately protect the human and other legal rights of seafarers contained in the guidelines and that, therefore, there was no need for the guidelines to be passed into their existing laws;
- Seventeen member States (38 per cent of the respondents) had passed the guidelines, either in whole or in part, into their national laws, either explicitly or implicitly;
- Fifteen member States (33 per cent of the respondents) requested assistance in the form of information regarding the meaning of the guidelines and/or model legislation by IMO for the purpose of giving effect to the guidelines.

The Committee concluded that (IMO, 2015g, pages 6–7):

- [T]his was an important issue for seafarers and should consequently be placed on the work programme of the Legal Committee;
- [T]he Committee should consider guidance on the implementation of the Guidelines, in particular for developing countries;
- [T]echnical support and assistance should be provided by [the Technical Cooperation Committee] TCC in order to facilitate the wide implementation of the Guidelines to improve the conditions for seafarers, taking into account human rights issues;

- [W]ork needed to be done towards the progressive removal of legislation targeting seafarers and imposing criminal sanctions on them;
- [I]t would be useful for States already giving effect to the Guidelines to provide translated copies of their laws to assist other States with their implementation efforts; and some States informed the Committee that they were ready to share their national legislation giving effect to the Guidelines;
- [W]ith regard to the compilation of statistics, it was also relevant to receive feedback from ports;
- States were urged to provide their embassies with the names of persons whom seafarers could contact to report violations of the Guidelines;
- [S]eafarers should be given greater training and awareness of their rights.

The Committee also noted with gratitude that the industry was prepared to contribute financially towards this work.

Key developments in summary

During the year under review, continued enhancements were made to regulatory measures in the field of maritime and supply chain security and their implementation. Developments included the issuance of a new version of the WCO SAFE Framework in June 2015,

which includes a new pillar 3 aiming to foster closer cooperation between customs administrations and other government agencies involved in the international trade supply chain. Other areas of progress included the implementation of AEO programmes and an increasing number of bilateral MRAs that will, in due course, form the basis for the recognition of AEOs at a multilateral level. As regards suppression of piracy and armed robbery, positive developments were noted in the waters off the coast of Somalia and the wider western Indian Ocean. However, concern remained about the seafarers still being held hostage. A downward trend of attacks in the Gulf of Guinea was also observed, indicating that international, regional and national efforts were beginning to take effect. Progress was also made at ILO and IMO regarding issues related to seafarers' fair treatment in the event of a maritime accident as well as to the issuance and recognition of SIDs.

D. STATUS OF CONVENTIONS

A number of international conventions in the field of maritime transport were prepared or adopted under the auspices of UNCTAD. Table 5.1 provides information on the status of ratification of each of these conventions as at 30 June 2015.

Table 5.1. Contracting States Parties to selected international conventions on maritime transport as at 30 June 2015

Title of convention	Date of entry into force or conditions for entry into force	Contracting States
United Nations Convention on a Code of Conduct for Liner Conferences, 1974	Entered into force 6 October 1983	Algeria, Bangladesh, Barbados, Belgium, Benin, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Republic, Chile, China, Congo, Costa Rica, Côte d'Ivoire, Cuba, Czech Republic, Democratic Republic of the Congo, Egypt, Ethiopia, Finland, France, Gabon, Gambia, Ghana, Guatemala, Guinea, Guyana, Honduras, India, Indonesia, Iraq, Italy, Jamaica, Jordan, Kenya, Kuwait, Lebanon, Liberia, Madagascar, Malaysia, Mali, Mauritania, Mauritius, Mexico, Montenegro, Morocco, Mozambique, Niger, Nigeria, Norway, Pakistan, Peru, Philippines, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Senegal, Serbia, Sierra Leone, Slovakia, Somalia, Spain, Sri Lanka, Sudan, Sweden, Togo, Trinidad and Tobago, Tunisia, United Republic of Tanzania, Uruguay, Venezuela (Bolivarian Republic of), Zambia (76)
United Nations Convention on the Carriage of Goods by Sea, 1978 (Hamburg Rules)	Entered into force 1 November 1992	Albania, Austria, Barbados, Botswana, Burkina Faso, Burundi, Cameroon, Chile, Czech Republic, Dominican Republic, Egypt, Gambia, Georgia, Guinea, Hungary, Jordan, Kazakhstan, Kenya, Lebanon, Lesotho, Liberia, Malawi, Morocco, Nigeria, Paraguay, Romania, Saint Vincent and the Grenadines, Senegal, Sierra Leone, Syrian Arab Republic, Tunisia, Uganda, United Republic of Tanzania, Zambia (34)
International Convention on Maritime Liens and Mortgages, 1993	Entered into force 5 September 2004	Albania, Benin, Congo, Ecuador, Estonia, Lithuania, Monaco, Nigeria, Peru, Russian Federation, Spain, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Serbia, Syrian Arab Republic, Tunisia, Ukraine, Vanuatu (18)
United Nations Convention on International Multimodal Transport of Goods, 1980	Not yet in force – requires 30 contracting Parties	Burundi, Chile, Georgia, Lebanon, Liberia, Malawi, Mexico, Morocco, Rwanda, Senegal, Zambia (11)
United Nations Convention on Conditions for Registration of Ships, 1986	Not yet in force – requires 40 contracting Parties with at least 25 per cent of the world's tonnage as per annex III to the Convention	Albania, Bulgaria, Côte d'Ivoire, Egypt, Georgia, Ghana, Haiti, Hungary, Iraq, Liberia, Libya, Mexico, Morocco, Oman, Syrian Arab Republic (15)
International Convention on Arrest of Ships, 1999	Entered into force 14 September 2011	Albania, Algeria, Benin, Bulgaria, Congo, Ecuador, Estonia, Latvia, Liberia, Spain, Syrian Arab Republic (11)

Note: For official status information, see <http://treaties.un.org> (accessed 24 September 2015).

E. TRADE FACILITATION AND SUSTAINABLE DEVELOPMENT

International shipping is also affected by the facilitation of maritime trade, that is, the import and export procedures and documentation requirements in seaports. Trade facilitation aims at simplifying administrative procedures and making them transparent and less time consuming and cumbersome for users involved in foreign trade operations. This will benefit concerned public sector agencies and traders, while improving transparency and governance. In this context, trade facilitation reforms are increasingly incorporated into broader policy areas that are relevant for achieving the SDGs. Beyond their relevance for trade competitiveness, most specific trade facilitation reforms also have a direct impact on a number of sustainable development targets.

Trade facilitation reforms and development mutually benefit each other in various ways (see Kituyi, 2013, 2014). The most frequently mentioned linkage is the positive impact that trade facilitation has on the competitiveness of developing countries and their participation in global trade and value chains (WTO, 2015a). Apart from this well-known impact that trade facilitation reforms have on trade, there exist important additional linkages with a country's development.

The entry into force and implementation of the TFA contributes towards “a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the WTO” (SDG target 17.10). The technical assistance and capacity-building to be provided under section II of the TFA can help to “increase Aid for Trade support for developing countries, particularly LDCs, including through the Enhanced Integrated

Table 5.2. Examples of articles of the TFA that may benefit from and help to achieve SDGs

Articles of the WTO TFA	Selected extracts from SDGs
Article 1: Publication and availability of information	“public access to information” (16.10)
Article 2: Opportunity to comment, information before entry into force and consultations	“responsive, inclusive, participatory and representative decision-making at all levels” (16.7)
Article 3: Advance rulings	“develop effective, accountable and transparent institutions at all levels” (16.6)
Article 4: Procedures for appeal or review	“rule of law at the national and international levels, and ensure equal access to justice for all” (16.3)
Article 5: Other measures to enhance impartiality, non-discrimination and transparency	“access to information and communications technology and strive to provide universal and affordable access to Internet in LDCs” (9.c)
Article 6: Disciplines on fees and charges imposed on or in connection with importation and exportation and penalties	“reduce corruption and bribery” (16.5)
Article 7: Release and clearance of goods	“enhance the use of enabling technologies in particular information and communications technology” (17.8)
Article 8: Border agency cooperation	“higher levels of economic productivity through diversification, technological upgrading and innovation” (8.2)
Article 9: Movement of goods intended for import under customs control	“capacity of domestic financial institutions” (8.10)
Article 10: Formalities connected with importation, exportation and transit	“higher levels of economic productivity through diversification, technological upgrading and innovation” (8.2)
Article 11: Freedom of transit	“regional and trans-border infrastructure” (9.1)
Article 12: Customs cooperation	“strengthen relevant national institutions, including through international cooperation, for building capacities at all levels, in particular in developing countries, for preventing violence and combating terrorism and crime” (16.a)
Article 23.2: National Committee on Trade Facilitation	“effective public, public–private and civil society partnerships” (17.17)

Source: Open Working Group proposal for sustainable development goals, available at <https://sustainabledevelopment.un.org/focussdgs.html> (accessed 25 June 2015).

Framework” (SDG target 8.a) and can “enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all sustainable development goals, including through North–South, South–South and triangular cooperation” (SDG target 17.9).

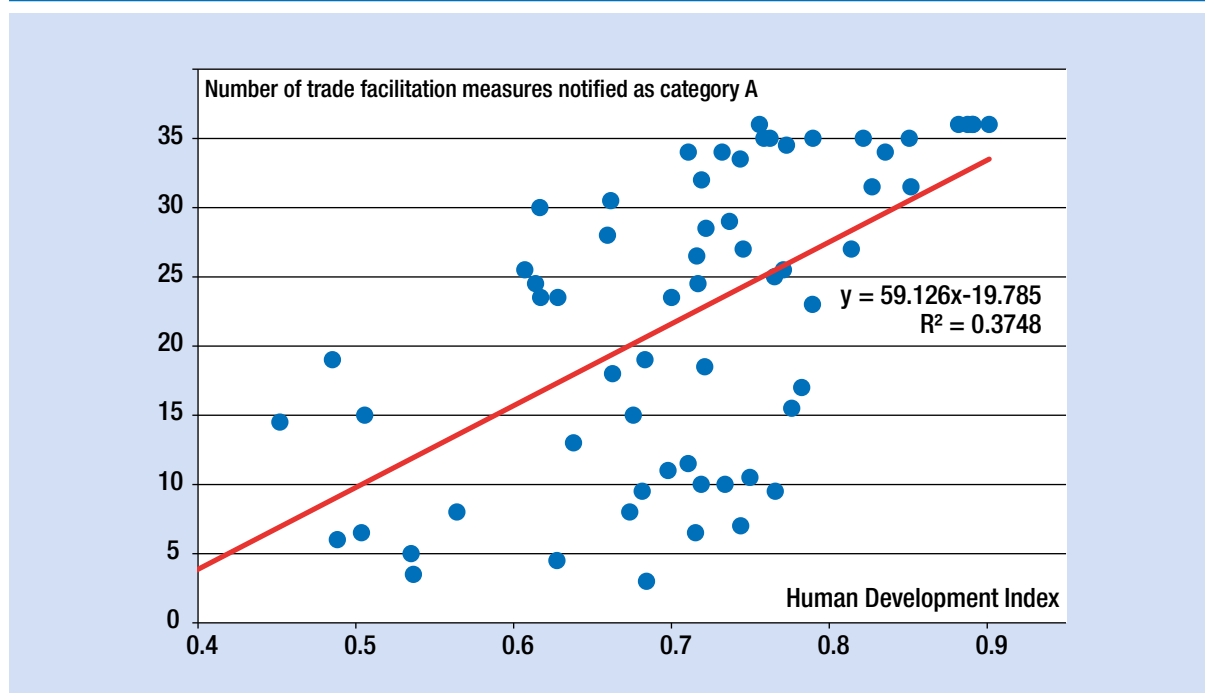
Many of the specific trade facilitation measures that are included in the TFA also have a direct linkage to different aspects of development. Table 5.2 provides a list of articles included in the TFA and links them to selected SDGs and targets.

Article 1 of the TFA, for example, covers the publication and availability of information on import, export and transit procedures; a country that complies with article 1 of the TFA will thus be closer to achieving the SDG target 16.10, which, *inter alia*, aims at ensuring “public access to information”. Another example is article 5 of the TFA, which, *inter alia*, requires Governments to publish certain announcements in a non-discriminatory and easily accessible manner; this is more easily achieved if traders have “access to Internet”, as stipulated in SDG

target 9.c. Article 6 of the TFA includes the requirement to avoid “conflicts of interest in the assessment and collection of penalties and duties”, which can help to “reduce corruption and bribery” covered by SDG target 16.5. A further example of possible linkages between the TFA and the SDGs is TFA article 11 on freedom of transit, which complements “regional and trans-border infrastructure” covered by SDG target 9.1.

For the effective implementation of the TFA, WTO members are required to “establish and/or maintain a national committee on trade facilitation or designate an existing mechanism to facilitate both domestic coordination and implementation of the provisions of [the TFA]”. Such a mechanism is crucial for ensuring the political buy-in of the relevant stakeholders from the public and private sectors, including users and providers of trade-supporting services (UNCTAD, 2014d). It also responds to the SDG target 17.17 to “encourage and promote effective public, public–private and civil society partnerships, building on the experience and resourcing strategies of partnerships”.

Figure 5.1. The Human Development Index (HDI) and the number of trade facilitation measures notified as category A



Source: UNCTAD secretariat, based on individual notifications published on the WTO website http://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm#notifications (accessed 24 September 2015). The HDI is sourced from UNDP, available at <http://hdr.undp.org/en/content/human-development-index-hdi> (accessed 24 September 2015).

In addition to the specific SDGs mentioned in table 5.2, there are several cross-cutting SDGs that benefit from and help to implement trade facilitation reforms. “[E]qual access for all women and men to affordable quality technical, vocational and tertiary education, including university” (4.3), for example, will help strengthen the capacities of traders and service providers to make use of the latest technologies and methods utilized by customs administrations and other border agencies. In general, many trade facilitation measures help the informal sector to better participate in formal foreign trade, thus supporting SDG target 8.3 on the “formalization and growth of micro-, small- and medium-sized enterprises”.

Since early 2014, WTO members have started to notify their “category A” trade facilitation measures to the WTO. “Category A contains provisions that a developing country Member or a least-developed country Member designates for implementation upon entry into force of this Agreement, or in the case of a least-developed country Member within one year after entry into force” (WTO, 2014). By 30 July 2015, a total of 67 developing countries had notified their category A provisions to the WTO secretariat (WTO, 2015b).

An analysis of the number of category A measures notified per country suggests that a close correlation exists between different indicators for development and the implementation of trade facilitation reforms. While a statistical correlation does not in itself say anything about causalities, the data suggest that the possible linkages listed in table 5.2 are supported by empirical evidence.¹⁰¹ For example, the coefficient of determination R^2 between the HDI and the number of measures notified as category A is around 0.37, suggesting that about 37 per cent of the variation in the number of category A notifications per country is statistically explained by the country’s HDI (figure 5.1).

Interestingly, the implementation of trade facilitation measures as reflected in the category A notifications is statistically less correlated with a country’s trade than with its level of development, as measured by the GDP per capita or the HDI. Put differently, the data from the category A notifications suggest that the likelihood that a developing country will implement trade facilitation reforms has more to do with its capacity and human and institutional development than with its level of foreign trade. Capacity development will thus continue to be key for the advancement of the TFA on the ground.

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ENDNOTES

- ¹ A new chapter XIV, "Safety measures for ships operating in polar waters".
- ² According to the tacit acceptance procedure, amendments enter into force by default unless objections are filed by a certain number of States.
- ³ Relevant in this context is a recent resolution by the United Nations General Assembly (A/69/L.65) deciding to develop an internationally legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.
- ⁴ See the Antarctic and Southern Ocean Coalition (a coalition of over 30 non-governmental organizations interested in Antarctic environmental protection and conservation) press release, available at <http://www.asoc.org/explore/latest-news/1364-press-release-polar-code-too-weak-to-properly-protect-polar-environments-from-increased-shipping-activity> (accessed 9 September 2015).
- ⁵ See the IMO press release available at <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/38-nmsc94polar.aspx#.VZEmLGw1-Hs> (accessed 9 September 2015); further documentation on the Polar Code, as well as presentations from a related workshop, can be found on the IMO website, available at <http://www.imo.org/en/MediaCentre/HotTopics/polar/Pages/default.aspx> (accessed 9 September 2015).
- ⁶ For an overview, see UNCTAD (2009), pages 16–18; see also Economic Commission for Europe (2013), pages 15 and 41–43.
- ⁷ See the IMO press release, available at <http://www.imo.org/MediaCentre/HotTopics/polar/Pages/default.aspx> (accessed 9 September 2015).
- ⁸ See the interview with the Secretary-General of IMO, published on 25 February 2015, available at <http://www.arctic-council.org/index.php/en/resources/news-and-press/news-archive/992-interview-with-secretary-general-of-the-international-maritime-organization-imo> (accessed 9 September 2015).
- ⁹ For further information, including on the status of ratification, see the website of the United Nations Division on Ocean Affairs and the Law of the Sea, available at <http://www.un.org/depts/los/index.htm> (accessed 9 September 2015).
- ¹⁰ SOLAS entered into force on 25 May 1980 and, as of 30 June 2015, had 162 States Parties representing 98.6 per cent of world tonnage.
- ¹¹ Other conventions dealing with shipping safety include: the Convention on the International Regulations for Preventing Collisions at Sea, 1972; the International Convention on Load Lines, 1966 (Load Lines Convention); the International Convention on Safe Containers, 1972; the International Convention on Standards of Training, Certification and Watchkeeping of Seafarers, 1978 (STCW); and the International Convention on Maritime Search and Rescue, 1979. Non-mandatory codes and guidelines include: the International Maritime Dangerous Goods Code, 2006 (SOLAS, chapter VII); the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk Code (International Gas Carrier Code 1993) (SOLAS chapter VII); and the 2008 Intact Stability Code.
- ¹² MARPOL entered into force on 2 October 1983 and, as of 30 June 2015, had 153 States Parties representing 98.52 per cent of world tonnage. While all contracting States to MARPOL are bound by annexes I (prevention and control of pollution by oil) and II (noxious liquid substances), not all contracting States have ratified or acceded to the other annexes. For further information, see the IMO website.
- ¹³ Other instruments dealing with ship-source pollution, whose provisions are also applicable in the polar regions, include the 2004 International Convention for the Control and Management of Ships' Ballast Water and Sediments (Ballast Water Convention); the Nairobi International Convention on the Removal of Wrecks, 2007 (Wreck Removal, 2007); the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention, 1972) and its 1996 Protocol; the 1990 International Convention on Oil Pollution Preparedness, Response and Cooperation, and its Protocol on Hazardous and Noxious Substances (OPRC/HNS Protocol, 2000).
- ¹⁴ Nairobi International Convention on the Removal of Wrecks, 2007; see UNCTAD, 2014a, pages 78–79.
- ¹⁵ The MLC entered into force on 20 August 2013 and, as of 30 June 2015, had 66 States Parties. For an overview, see UNCTAD (2013), page 104.

- ¹⁶ MARPOL Special Areas are certain waters that require, 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.
- ¹⁷ MARPOL annex I, regulation 15.
- ¹⁸ MARPOL annex II, regulation 13.
- ¹⁹ MARPOL annex V, regulation 5.
- ²⁰ MARPOL annex I, regulation 43.
- ²¹ The Antarctic Treaty System regulates relations among States in the Antarctic. The main instrument is the Antarctic Treaty, which was signed on 1 December 1959 and entered into force on 23 June 1961. The original Parties to the Treaty were the 12 nations active in the Antarctic during the International Geophysical Year of 1957–1958. As of 30 June 2015, the present total number of Parties is 52. The Treaty is supplemented by recommendations adopted at consultative meetings, by the Protocol on Environmental Protection to the Antarctic Treaty (Madrid, 1991) and by two separate conventions dealing with wildlife resources, the Convention for the Conservation of Antarctic Seals (London, 1972) and the Convention for the Conservation of Antarctic Marine Living Resources (Canberra, 1980). The Convention on the Regulation of Antarctic Mineral Resource Activities (Wellington, 1988), negotiated between 1982 and 1988, will not enter into force.
- ²² See the Protocol on Environmental Protection to the Antarctic Treaty (1991), which entered into force on 14 January 1998, annex IV, articles 5 and 6.
- ²³ The Arctic is a shallow sea sometimes covered by multi-year ice or single-year ice and surrounded by land masses. The Antarctic is an ice-covered continent which is surrounded by a deep ocean. The Arctic has been home to native peoples, who have made their living from the environment, for thousands of years. The Antarctic has no permanent population of people. The Arctic is currently less protected by international law than the Antarctic. For more information, see Det Norske Veritas (2011).
- ²⁴ For a background on the importance of this issue, see <http://globallast.imo.org/> (accessed 9 September 2015).
- ²⁵ Held 13–17 October 2014 and 11–15 May 2015, respectively.
- ²⁶ For further details, see the *Review of Maritime Transport 2013*. It should be noted that the issue of possible market-based measures was not discussed at the sixty-sixth, sixty-seventh and sixty-eighth sessions of MEPC.
- ²⁷ For a summary of the content of the regulations, see UNCTAD (2012b), pages 97–98; for an overview of the discussions on the different types of measures, see UNCTAD (2011a), pages 114–116.
- ²⁸ A copy of the study and further information on the methodology are available at <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Greenhouse-Gas-Studies-2014.aspx> (accessed 9 September 2015).
- ²⁹ MEPC 68/5/1 (Marshall Islands).
- ³⁰ These include identification of the primary fuel for the calculation of the attained EEDI for ships fitted with dual-fuel engines using LNG and liquid fuel oil.
- ³¹ These make the guidelines applicable to phase 1 (starting 1 January 2015) of the EEDI requirements.
- ³² These make the guidelines “applicable to level-1 minimum power lines assessment for bulk carriers and tankers, and agreed on a phase-in period of six months for the application of the amendments”.
- ³³ As required by regulation 21.6 of MARPOL annex VI, at the beginning of phase 1 and at the midpoint of phase 2, the Organization shall review the status of technological developments and, if shown to be necessary, amend the time periods, the EEDI reference line parameters for relevant ship types and the reduction rate; see IMO (2015a), page 28.
- ³⁴ The intersessional Correspondence Group on Further Technical and Operational Measures for Enhancing Energy Efficiency, established at the sixty-seventh session of MEPC. The report is available as document MEPC 67/WP.13. For further information on the deliberations and documentation, see IMO (2015a) page 34.

- 35 MARPOL annex VI came into force on 19 May 2005 and, as of 30 June 2015, has 82 States Parties representing 95.23 per cent of world tonnage. Annex VI covers air pollution from ships, including NO_x and SO_x emissions and PM.
- 36 See <http://onlinelibrary.wiley.com/doi/10.1002/jgrd.50171/pdf> (accessed 24 September 2015).
- 37 For various opinions on the impact of emissions of black carbon on the Arctic and on global climate change, see: documents MEPC 68/3/5 and MEPC 68/3/5/Corr.1 (the Russian Federation), presenting data on black carbon emissions from shipping in ice conditions of the Arctic seas adjacent to the Russian Federation territory; the assessment by these documents of black carbon emissions from ships operating in the Arctic in ice conditions is that their impact is only regional and cannot pose a threat to climate change, and that black carbon emissions from ships can influence ice and snow properties only in cases where the emissions occur less than 100 kilometres from the ice edge; MEPC 68/3/19 (CSC), providing comments on document MEPC 68/3/5, pointing out that it does not follow any scientific standard for citations and assessment of differences to previous studies; and MEPC 68/3/22 (Norway), providing comments on document MEPC 68/3/5, requesting MEPC to continue its work on black carbon in accordance with the work plan agreed at MEPC 62.
- 38 For further discussion, see IMO (2014b), pages 35–39.
- 39 The first two SO_x ECAs, the Baltic Sea and the North Sea areas, were established in Europe and took effect in 2006 and 2007, respectively. The third established was the North American ECA, taking effect on 1 August 2012. In July 2011, a fourth ECA, the United States Caribbean Sea, was established. This latter area covers certain waters adjacent to the coasts of Puerto Rico (United States) and the United States Virgin Islands, and took effect on 1 January 2014.
- 40 Required under of MARPOL annex VI, regulation 14 “Sulphur oxides (SO_x) and particulate matter”.
- 41 Consisting of 13 member States, one intergovernmental organization and six international non-governmental organizations.
- 42 For more information, see IMO (2015a), page 25.
- 43 Intended as a tool to assist in managing requests for spill response resources and offers for assistance from other countries and organizations when confronted with significant oil spill incidents.
- 44 Parts I (Basic information) and II (National policy) of the IMO Dispersant Guidelines have already been approved and will be published together with Part III. Part IV, covering subsea dispersant application, is under development and will take into account the experience gained from the Deepwater Horizon incident as well as other related technical developments.
- 45 See <http://globallast.imo.org/> (accessed 9 September 2015).
- 46 Four proposed by the Republic of Korea and two by Singapore.
- 47 Two proposed by Japan and two by the Republic of Korea.
- 48 During 2014 and 2015, five States, Georgia, Japan, Jordan, Tonga and Turkey, acceded to the Convention.
- 49 For reasons related to the language and substance of this non-binding resolution, the delegation of the United States reserved its position with regard to it.
- 50 Initiated during the sixty-seventh session of MEPC and being conducted by the IMO secretariat in partnership with the World Maritime University.
- 51 With the collaboration of IMO and the International Oil Pollution Compensation Funds and International Tanker Owners Pollution Federation secretariats. Its purpose would be to promote the Convention by focusing on its fundamental public policy intent and objectives, rather than serving as a guide on how to implement the Convention.
- 52 For more information, see IMO (2015g), page 4.
- 53 Also highlighted in the *Review of Maritime Transport 2013*, pages 110–111; for further information on the international liability and compensation framework for ship-source oil pollution see also UNCTAD (2012a).
- 54 The 1992 Civil Liability Convention and 1992 International Oil Pollution Compensation Fund Convention; for an analytical overview of the legal framework, see UNCTAD (2012a).

- ⁵⁵ See, for instance, “Shell Arctic oil drilling to commence within weeks”, 3 July 2015, available at <http://www.bbc.com/news/business-33379982> (accessed 9 September 2015).
- ⁵⁶ For more information, see *On Scene Coordinator Report Deepwater Horizon Oil Spill*, submitted in September 2011, available at http://www.uscg.mil/foia/docs/dwh/fosc_dwh_report.pdf (accessed 24 September 2015).
- ⁵⁷ See *Lloyd's List*, Is BP now an attractive takeover target? 2 July 2015.
- ⁵⁸ Pillar I is mainly based on the model of the Container Security Initiative (CSI), introduced in the United States in 2002, and Pillar II is mainly based on the model of the C-TPAT, introduced in the United States in 2001. For more information on these, as well as for an analysis of the main features of customs supply chain security, namely advance cargo information, risk management, cargo scanning and authorized economic operators (AEOs), see WCO (2011). For a summary of the various United States security programmes adopted after September 11, see UNCTAD (2004).
- ⁵⁹ As of June 2015, 168 out of 180 WCO member States have signed the letter of intent to implement the SAFE Framework.
- ⁶⁰ A June 2012 version of the SAFE Framework can be found in WCO (2012). Also, the SAFE Package, bringing together all WCO instruments and guidelines that support its implementation, is available at http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/tools/safe_package.aspx (accessed 24 September 2015).
- ⁶¹ The SAFE Framework AEO concept has its origin in the International Convention on the Simplification and Harmonization of Customs Procedures, as amended (revised Kyoto Convention), which contains standards on “authorized persons” and national programmes.
- ⁶² The first MRA was concluded between New Zealand and the United States in June 2007. As of June 2015, 32 bilateral MRAs had been concluded. A further 19 are being negotiated between: Brazil and the Republic of Korea; Canada and the European Union; Canada and Israel; Canada and Mexico; China and Israel; China and Japan; China and the United States; Costa Rica and Mexico; Costa Rica and the United States; the European Union and Hong Kong, China; Hong Kong, China and Japan; Hong Kong, China and Malaysia; Hong Kong, China and Thailand; India and the Republic of Korea; Israel and the Republic of Korea; Japan and Switzerland; New Zealand and Singapore; Norway and Switzerland; and the Republic of Korea and Thailand.
- ⁶³ Due to the fact that 28 European Union countries have one common uniform AEO programme.
- ⁶⁴ This is according to information provided by the WCO secretariat. For more information, see WCO (2015b).
- ⁶⁵ These were Armenia, Azerbaijan, Colombia, Egypt, Georgia, India, Malaysia, Mongolia, Saudi Arabia, Serbia and Sudan. Furthermore, an AEO global conference was organized in Madrid in April 2014 and in spring 2016, a new global conference is planned for Mexico.
- ⁶⁶ Regulation (EC) 648/2005 and its implementing provisions.
- ⁶⁷ See, in particular, UNCTAD (2011a), which provides an overview of the major changes this amendment introduced to the Customs Code at pages 122–123.
- ⁶⁸ For more information, see http://ec.europa.eu/ecip/security_amendment/index_en.htm (accessed 25 September 2015).
- ⁶⁹ According to information provided by the European Commission’s Taxation and Customs Union Directorate General, as of 11 June 2015, 17,782 applications for AEO certificates had been submitted and 15,476 certificates issued. The number of applications rejected up to 11 June 2015 was 1,881 (11 per cent of the applications received) and the number of certificates revoked was 1,383 (9 per cent of certificates issued). The breakdown reported per certificate type issued was: AEO-F 7,742 (50 per cent); AEO-C 7,152 (46 per cent); and AEO-S 582 (4 per cent).
- ⁷⁰ For the self-assessment questionnaire, see http://ec.europa.eu/taxation_customs/resources/documents/customs/policy_issues/customs_security/aeo_self_assessment_en.pdf (accessed 25 September 2015). Explanatory notes are also available at http://ec.europa.eu/taxation_customs/resources/documents/customs/policy_issues/customs_security/aeo_self_assessment_explanatory_en.pdf (accessed 25 September 2015).

- 71 The European Union has already concluded MRAs with Andorra, China, Japan, Norway, Switzerland and the United States. Negotiations are ongoing with Canada. For further information on AEOs, see http://ec.europa.eu/taxation_customs/customs/policy_issues/customs_security/aeo/index_en.htm (accessed 25 September 2015).
- 72 See the European Commission press release of 21 August 2014 – Customs: Commission adopts strategy and action plan for better customs risk management, available at http://europa.eu/rapid/press-release_IP-14-936_en.htm (accessed 25 September 2015).
- 73 See <http://www.cbp.gov/border-security/ports-entry/cargo-security> (accessed 25 September 2015).
- 74 For more information on the various security initiatives, see UNCTAD (2004).
- 75 For more information about CSI, see <http://www.cbp.gov/border-security/ports-entry/cargo-security/csi/csi-brief> (accessed 25 September 2015). The implementation of legislative requirements to scan 100 per cent of all United States-bound containers was again deferred in 2014 for another two years. See also UNCTAD (2014a), pages 86–87.
- 76 The nine countries/territories are Canada, Israel, Japan, Jordan, Mexico, New Zealand, the Republic of Korea, Singapore and Taiwan Province of China.
- 77 Importer Security Filing and Additional Carrier Requirements.
- 78 For more information on the “10+2” rule, see <http://www.cbp.gov/border-security/ports-entry/cargo-security/importer-security-filing-102> (accessed 25 September 2015).
- 79 For more information, see <http://www.cbp.gov/trade/isa/importer-self-assessment> (accessed 9 September 2015). For information on the benefits for the participants, see <http://www.gpo.gov/fdsys/pkg/FR-2002-06-17/pdf/02-15308.pdf> (accessed 25 September 2015).
- 80 For more information, see <http://www.gpo.gov/fdsys/pkg/FR-2014-06-16/pdf/2014-13992.pdf> (accessed 25 September 2015).
- 81 For more information, see <http://www.state.gov/t/isn/c10390.htm> (accessed 25 September 2015).
- 82 For more information, see <http://www.cbp.gov/border-security/international-initiatives/international-agreements/cmaa> (accessed 25 September 2015).
- 83 On 1 July 2004, the 2002 amendments to SOLAS and the new ISPS Code entered into force and became mandatory for all SOLAS member States. For more information, see UNCTAD (2004 and 2007).
- 84 See also *Lloyd’s List*, 2015, Minimal changes made to ISO 28007 standards for maritime security, March, available at <http://www.lloydlist.com/ll/sector/ship-operations/article459421.ece> (accessed 9 September 2015).
- 85 For more information, see IMO (2014g). See also <http://www.imo.org/OurWork/Security/WestAfrica/Pages/WestAfrica.aspx> (accessed 25 September 2015). Reports of actual and attempted attacks by pirates and armed robbers are promulgated via the Global Integrated Shipping Information System, available at <http://gis.imo.org> (accessed 9 September 2015).
- 86 Currently located in the Regional Maritime University in Accra.
- 87 By the Economic Community of Central African States, the Gulf of Guinea Commission and member States in the region.
- 88 Available at http://www.imo.org/OurWork/Security/WestAfrica/Documents/code_of_conduct%20signed%20from%20ECOWAS%20site.pdf (accessed 25 September 2015).
- 89 For further information, see the Maritime Trade Information Sharing Centre website, www.mtisc-gog.org (accessed 9 September 2015). The newly updated *Guidelines for Owners, Operators and Masters for Protection against Piracy in the Gulf of Guinea Region*, developed jointly by the Baltic and International Maritime Council, the International Chamber of Shipping, INTERTANKO and INTERCARGO is also available via the IMO website as well as on the websites of those organizations.
- 90 From China, Japan, Nigeria, Norway, the United Kingdom and most recently Angola.
- 91 For IMO guidance on piracy and best management practices, see <http://www.imo.org/OurWork/Security/PiracyArmedRobbery/Pages/Default.aspx> (accessed 25 September 2015).
- 92 The full text of the statement is set out in IMO (2014h), annex 29.

- ⁹³ The group, known as “the Kampala Process”, comprises members of the Somali Contact Group on Counter-piracy and was established in 2010 with the objective of promoting coordination and information-sharing between counter-piracy offices of the Government of Somalia, Galmudug, Puntland and Somaliland.
- ⁹⁴ EUCAP Nestor is a European Union civilian mission, with some military expertise, under the Common Security and Defence Policy. EUCAP Nestor is an unarmed capacity-building mission with no executive powers, which aims to support the development of maritime security systems in the Horn of Africa and the western Indian Ocean States, thus enabling them to fight piracy and other maritime crime more effectively. For more information, see <https://www.eucap-nestor.eu> (accessed 9 September 2015).
- ⁹⁵ By the Special Adviser to the IMO Secretary-General on Maritime Security and Facilitation.
- ⁹⁶ For more information, see IMO (2015k), page 7.
- ⁹⁷ See, for example, ILO press release of 4 April 2014, ILO, “Maritime sector to address abandonment of seafarers and shipowners’ liability”, available at http://www.ilo.org/global/about-the-ilo/media-centre/press-releases/WCMS_240418/lang--en/index.htm (accessed 29 September 2015).
- ⁹⁸ Issues related to ILO Convention No. 185 on Seafarers’ Identity Documents (Revised) 2003 were discussed during a Tripartite Meeting of Experts held on 4–6 February 2015.
- ⁹⁹ For more information, see http://www.ilo.org/global/standards/maritime-labour-convention/events/WCMS_301223/lang--en/index.htm (accessed 25 September 2015).
- ¹⁰⁰ Conducted by Seafarers’ Rights International.
- ¹⁰¹ The coefficient of determination, R^2 , between the HDI and the number of measures notified as category A is 0.3748, suggesting that about 37.48 per cent of the variation in the number of category A notifications per country is statistically explained by the country’s HDI. Similar R^2 s are obtained for the correlation between the category A notifications and the GDP per capita ($R^2 = 0.36$) and the share of individuals with access to Internet ($R^2 = 0.35$). The number of trade facilitation measures notified as category A have been calculated by UNCTAD on the basis of the individual notifications published on the WTO website, available at http://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm#notifications (accessed 25 September 2015). In several cases a WTO member notified specific measures as partially under category A; in these cases UNCTAD counted the case as 0.5. GDP per capita has been estimated by UNCTAD. Data are for 2013. The HDI is sourced from UNDP, available at <http://hdr.undp.org/en/content/human-development-index-hdi> (accessed 25 September 2015). Data are for 2013. The percentage of individuals using Internet is sourced from the International Telecommunication Union, available at <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx> (accessed 25 September 2015). Data are for 2013.