

This chapter summarizes important recent international legal and regulatory developments. It also covers maritime trade and transport facilitation issues, particularly those related to COVID-19 which has created many problems for clearing goods through ports, but also created opportunities for new and smart solutions.

Many of the latest innovations in maritime transport involve online and automated systems that raise concerns about cybersecurity. However, shipowners and operators can also take advantage of recently adopted guidelines on how to maintain cybersecurity in their companies and onboard ships, taking into account the requirements of IMO, and other relevant guidelines.

The COVID-19 pandemic has highlighted many systemic weaknesses, including delays in documentation and related problems, which could provide an impetus for the more widespread use of secure electronic solutions that are already available and accepted by the market. Related work at UN bodies, including the United Nations Commission on International Trade Law (UNCITRAL), is also underway, to explore the possibility of developing a negotiable transport document or electronic record.

In addition, the industry is conducting trials on maritime autonomous surface ships (MASS). In May 2021, the IMO Maritime Safety Committee (MSC) completed a regulatory scoping exercise. A number of high-priority issues, cutting across several legal instruments, remain to be addressed at a policy level to determine future work.

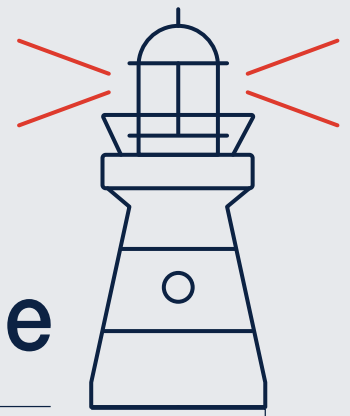
In June 2021, the IMO adopted amendments to Annex VI of the MARPOL Convention aimed at reducing carbon intensity of ships and including targets for energy efficiency, to further reduce GHG emissions from shipping. The industry is also planning an International Maritime Research and Development Board, a non-governmental body funded by a \$2-per-ton-levy on shipping fuel. Other important regulatory developments relate to the ship-source pollution control and environmental protection measures, including shipping and climate change mitigation and adaptation; air pollution, in particular sulphur emissions; oil pollution from ships; ballast water management; and biofouling.

Finally, the chapter addresses maritime trade and transport facilitation. This includes the Trade Facilitation Agreement of the World Trade Organization and recent amendments to the FAL Convention related to digitalization, concluding with a section on UNCTAD's ASYHUB Maritime system.

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Legal and regulatory developments and the facilitation of maritime trade

Legal and regulatory developments and the facilitation of maritime trade



Development of maritime autonomous surface ships (MASS) technology and trials, as well as related regulatory responses, are advancing



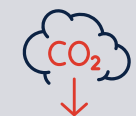
With increasing automation and digitalization, there is a growing need to effectively protect shipping assets and technology from cyber threats



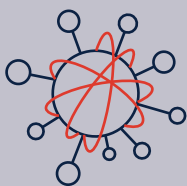
Climate-change adaptation and resilience-building for seaports is becoming an increasingly urgent challenge, especially for vulnerable developing countries that are at high and growing risk of climate change impacts



IMO Member States agree on new mandatory regulations to further reduce GHG emissions from international shipping



Digitalization and automation of trade procedures such as Maritime Single Windows are catalysts for more efficient and paperless compliance processes at ports



Multilateral Agreements such as the WTO TFA and the IMO FAL Convention provide solid international standards to build automated systems while ensuring interconnectivity and interoperability



Building resilient and efficient logistic supply chains requires public-private dialogue. Cooperation from businesses involved in maritime trade and port operations through National Trade Facilitation Committees foster successful trade reforms



A. TECHNOLOGICAL DEVELOPMENTS IN THE MARITIME INDUSTRY

1. Ensuring maritime cybersecurity

The maritime sector is increasingly structured around online and automated systems. These are appearing in shipping, port operations, offshore infrastructure, and digital commercial transactions. Online platforms and information systems have many advantages but also expose the industry to new and unforeseen threats and vulnerabilities, notably the risk of cyberattacks (British Ports Association, 2020). In response, in recent years the IMO has adopted number of international instruments and developed tools for assessing the cybersecurity risks and vulnerabilities of the international maritime sector and strengthening the resilience of vital systems of shipping companies, ships and ports.¹

More recently, the industry organization BIMCO issued 'Guidelines on Cyber Security on board Ships – fourth version' (BIMCO et al., 2021).² Taking account of IMO guidelines and the US National Institute of Standards and Technology (NIST) framework, the guidance specifies, for example, that company plans and procedures for cyber-risk management should be incorporated into existing security and safety risk management requirements contained in the International Safety Management Code (ISM) Code and International Ship and Port Facility Security (ISPS) Code.

According to the BIMCO guidelines, enterprises should:

- *Identify cybersecurity threats* – to the ship, both external and internal, including those posed by inappropriate use, and poor cybersecurity practices.
- *Identify vulnerabilities of assets within the company* – and develop inventories of onboard systems with direct and indirect communications links. Everyone concerned should understand the consequences of cybersecurity threats and the capabilities and limitations of existing protection measures.
- *Assess risk exposure, and vulnerabilities* – and the potential for such vulnerabilities being exploited.
- *Develop protection and detection measures* – to reduce the likelihood of vulnerabilities being exploited and the potential impact.
- *Establish response plans* – including contingency plans to respond to cyber-risks, and tackle the effects of potential attacks on ship safety and security.
- *Respond and recover* – from any cyber security incidents using the contingency plan, then report on the effectiveness of the response plan, update it, and reassess threats and vulnerabilities (BIMCO et al., 2021).

The maritime industry is increasingly taking action against these threats, but much remains to be done. Maintaining effective cybersecurity is not easy. It requires collaborative, top-down approaches that engage senior management, combined with bottom-up approaches working with other staff to identify vulnerabilities and risks unique to each operational environment – all the while balancing and managing such risks within acceptable limits.

Implementing cybersecurity helps to protect shipping assets and technology from cyber-threats and makes economic sense. But inaction could also result in consequences. Shipowners who fail to comply with the IMO requirements risk having their ships detained by port control authorities – though enforcement should be uniform and equitable.

Failure to address cybersecurity may also result in potential contractual liability. Cyberattacks can cause damage, loss or misappropriation of cargos, with implications for liability in the context of contracts for the carriage of goods by sea. Arguably, a shipowner's obligation to exercise due diligence, and provide a seaworthy vessel before and at the beginning of the voyage (see Art. III, r. 1 and IV, r. 1, Hague-Visby Rules³), may also include an obligation to conduct regular cybersecurity risk assessments, and address

¹ For further information, and an overview of IMO, ISO, EU, US and industry cybersecurity guidance, see UNCTAD, 2020a, chapter 5. See also IMO, 2021a.

² Other available guidelines include the Digital Container Shipping Association's Implementation Guide for Cyber Security on Vessels v1.0 (DCSA, 2020), based on version 3 of the industry guidelines (BIMCO et al., 2018), and the US NIST framework (NIST, 2018). While their target audience is the container industry, other segments of shipping may also find them useful. In addition, the International Association for Classification Societies (IACS) has issued a recommendation (IACS 2020), which applies to newbuild ships only, but can also serve as guidance for existing ships.

³ <https://www.jus.uio.no/lm/sea.carriage.hague.visby.rules.1968/portrait.pdf>.

risks and reduce vulnerabilities through safety management systems, in accordance with IMO and industry guidance.

For ports, BIMCO and other maritime NGOs have invited public and private stakeholders to help create global digital ISO standards to facilitate the digital exchange of data, particularly in light of the new urgency brought about by the COVID-19 pandemic and increasing demand (BIMCO, 2021).

2. Maritime autonomous surface ships

The use of maritime autonomous surface ships (MASS) could increase safety and improve environmental performance, and accelerate decarbonization. Various countries are moving ahead fast with this technology and currently have MASS commercial projects at the stage of advanced testing and trialling (Gard, 2020; Yara, 2020).

To enable the safe, secure, and environmentally sound operation of MASS within the existing IMO instruments, the IMO has been considering amending its regulatory framework (IMO, 2017, para. 20.2). These issues are also being considered by the academic community, industry, and governments. In 2017 the IMO Maritime Safety Committee (MSC), embarked on a regulatory scoping exercise which it completed in May 2021. This should also help progress related discussions in other IMO Committees namely LEG, MEPC and FAL (see also UNCTAD, 2019).

For each provision under its purview the MSC considered whether MASS could be regulated by either: equivalences as provided by the instruments or developing interpretations; and/or amending existing instruments; and/or developing a new instrument; or none of the above.⁴

The committee highlighted high-priority issues that cut across several instruments. An immediate concern is terminology – including the definition of a MASS and clarifying terms such as “master”, “crew” and “responsible person” which should be agreed internationally in cooperation with the ISO. The MSC has also considered the function and operations of the remote-control station or centre, and the possible designation of a remote operator as a ‘seafarer’. The committee has identified other issues across several safety treaties related to: manual operations and alarms on the bridge; actions by personnel, such as firefighting, cargo stowage and securing and maintenance; watchkeeping; search and rescue; and the information required to be on board for safe operation.

The MSC noted that the best way to address these gaps and themes would be to proceed in a holistic manner. This should result in a MASS instrument/Code whose goals, functional requirements, and corresponding regulations, are suitable for all four degrees of autonomy. For further work it will be important to establish a joint MSC/LEG/FAL working group, but in the meantime these committees can liaise on common issues and align any future work (IMO, 2021b).

In July 2021, the IMO Legal Committee completed its scoping exercise, concluding that MASS could be accommodated within the existing LEG conventions without the need for major adjustments or a new instrument. Some conventions can accommodate MASS as drafted, though others may require additional interpretations or amendments (IMO, 2021c).

B. REGULATORY DEVELOPMENTS RELATING TO INTERNATIONAL SHIPPING, CLIMATE CHANGE AND OTHER ENVIRONMENTAL ISSUES

1. IMO action on greenhouse gas emissions

In April 2018 the IMO adopted its initial strategy on reducing greenhouse gas (GHG) emissions from ships (see IMO, 2018, annex 1; UNCTAD, 2019). This envisages emissions peaking as soon as possible and by 2050 falling to at least 50 per cent below the 2008 level, with the aim of being phased out entirely. By 2030 the target is to reduce the carbon intensity of international shipping by at least 40 per cent of the 2008 level (IMO, 2020a).

In June 2021, in line with the IMO initial strategy, the MEPC adopted new mandatory regulations as amendments to Annex VI of the MARPOL Convention. These build on earlier efficiency requirements and aim to cut the carbon intensity of existing ships, and further reduce GHG emissions from shipping – requiring operators to measure the energy efficiency of all ships and meet specified targets.

⁴ The outcome of the MSC’s regulatory scoping exercise, as approved by the Committee, including the full analysis of treaties, can be found as an annex to the report on its 103rd session (IMO, 2021b).

For this purpose, operators can use a new Energy Efficiency Existing Ship Index (EEXI), along with a new operational carbon intensity indicator (CII) – a dual-track approach that will enable them to address both technical and operational measures. The EEXI measures the energy efficiency of the ship compared to a baseline and should be calculated for ships of 400 GT and above, in accordance with values set for ship types and size categories. Ships are required to reduce the EEXI by a specified percentage of the baseline.

Ships of 5,000 GT are already required to collect data on fuel oil consumption. Now they must also bring their operational carbon intensity within a specific level, document and verify their CII against the required value, and record this in the Ship Energy Efficiency Management Plan (SEEMP). This should result in a performance rating of A, B, C, D or E – corresponding to major superior, minor superior, moderate, minor inferior, or inferior. A ship rated D for three consecutive years, or E, would have to submit a plan for corrective action, to show how the required rating (C or above) would be achieved. Administrations, port authorities and other stakeholders are encouraged to provide incentives to ships rated A or B.

These amendments are expected to enter into force on 1 November 2022, with the requirements for EEXI and CII certification coming into effect from 1 January 2023. This will allow the first annual reporting on carbon intensity to be completed in 2023, with the first rating given in 2024. For its part, the IMO is to review the effectiveness of the implementation by 1 January 2026 and, if necessary, adopt further amendments. To support the implementation, the MEPC has also adopted related guidelines.

The GHG reduction candidate measures considered at IMO need to undergo an initial assessment of their impact on States, based on the procedure adopted in 2019 (MEPC.1/Circ.885). The procedure also states that proposed measures, including the latest measures adopted, need to undergo a comprehensive impact assessment before adoption if required by the Committee. To support this process, UNCTAD has been collaborating with the IMO on an expert review of the impact assessments submitted to ISWG-GHG 7, as well as the final comprehensive impact assessment of the short-term combined measures submitted to the 76th session of MEPC (UNCTAD, 2021a; see also chapters 2 and 4 for a discussion of the outcomes).

The 75th and 76th sessions of the MEPC also discussed an industry-led proposal for a non-governmental International Maritime Research and Development Board (IMRB), funded by a mandatory \$2 per-tonne levy on ship fuel. The MEPC also considered mid- and long-term measures, including market-based measures, and a work plan for further cutting GHG emissions from shipping, in line with the initial IMO strategy (IMO, 2021d). Further consideration of the proposals should take place during ISWG-GHG 10 in October 2021.

2. Adapting transport infrastructure to the impacts of climate change

In August 2021, less than three months before COP26 in Glasgow in November 2021, the Intergovernmental Panel on Climate Change issued its 6th Assessment Report (AR6) (IPCC, 2021). This was the first comprehensive review of the science of climate change since 2013 and gave clear warnings of increasingly extreme heatwaves, droughts, and flooding that could have devastating consequences, making effective adaptation action a matter of increasing urgency. AR6 projects that, depending on scenario, the mean global temperature increase of 1.5°C relative to pre-industrial times is likely to be reached by 2040; and if emissions are not slashed in the next few years this threshold may be reached even earlier. Nevertheless, these impacts can be avoided if the world acts quickly with essential measures for adaptation and mitigation (IPCC 2018; IPCC 2019; IPCC 2021).

Adaptation will be particularly important for seaports. Ports are exposed to various climate hazards, including heat waves, extreme winds and precipitation, as well as a rise in mean sea level and associated extreme sea-levels (IPCC, 2019). This consideration, which is of particular importance from the perspective of developing countries, was highlighted again in October 2020, at the eighth session of the UNCTAD Multi-year Expert Meeting on Transport, Trade Logistics and Trade Facilitation which focused on “Climate change adaptation for seaports in support of the 2030 Agenda for Sustainable Development” (UNCTAD, 2020c) (UNCTAD, 2020d). Effective adaptation will need to be underpinned by strong legal and regulatory frameworks, along with strategies, policies and plans to reduce vulnerability. For this purpose, stakeholders will need the appropriate standards, guidance and tools.

One of the outcomes of COP22 was the Marrakech Partnership for Global Climate Action⁵, which is designed to provide a strong foundation for how the UNFCCC process will catalyse and support climate action. This has produced the ‘Climate Action Pathway for Transport’ which includes recommendations for ‘Resilient transport systems, infrastructure and vehicles’, with milestones towards 2050 (for 2025, 2030

⁵ See https://unfccc.int/climate-action/marrakech-partnership/reporting-and-tracking/climate_action_pathways.

and 2040) (UNFCCC, 2021a and 2021b). By 2025, all new transport infrastructure, systems and, where necessary vehicles, should be climate-resilient to at least 2050; by 2030, that should extend to all critical transport infrastructure and systems. By 2040, all critical infrastructure and systems should be climate-resilient to at least 2100 (UNFCCC, 2021b).

Translating this timely ambition into action will require a major acceleration of efforts. For its part, in 2021 the EU issued its Climate Change Adaptation Strategy, which aims for a climate-resilient EU by 2050 – “by making adaptation smarter, more systemic, swifter, and by stepping up international action” (European Commission, 2021). The EU has also adopted a new Climate Law, which entered into force on 29 July 2021 (European Union, 2021). This aims for EU climate neutrality by 2050 and by 2030 to reduce domestic net greenhouse gas emissions by at least 55 per cent of their 1990 levels. In addition, the new law envisages “continuous progress in enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change in accordance with Article 7 of the Paris Agreement” and related stocktaking, starting in 2023.

Guidance for action has also been produced by the World Association for Waterborne Transport Infrastructure (PIANC). In 2020 PIANC issued a revised version of ‘Climate Change Adaptation Planning for Ports and Inland Waterways’ (PIANC 2020). This covers priority actions such as: inspection and maintenance; monitoring systems and effective data management; and risk assessments, contingency plans and warning systems. It also focuses on flexible and adaptive infrastructure, systems and operations and better resilience through engineered redundancy.

Also worth noting is the new ISO standard ISO 14091:2021 – Adaptation to climate change-Guidelines on vulnerability, impacts and risk assessment (ISO, 2021). This covers vulnerability to climate change, and highlights the importance of risk assessments and of monitoring and evaluating for any organization, regardless of size, type, or nature.

In 2020 during the COVID-19 pandemic, there was a significant fall in investment in transport infrastructure.⁶ However, major scaling up of investment and capacity building for developing countries will be critical to ‘building back better’ after the pandemic. The OECD estimates that meeting the SDGs by 2030 will require \$6.9 trillion in infrastructure investment annually, (OECD, 2017). At a recent UNCTAD dialogue, SIDS representatives highlighted the urgent need for better availability/access to green and blue infrastructure financing (UNCTAD, 2021b and c). This could bring enormous economic benefits: the World Bank estimates that investing in resilient infrastructure in developing countries could bring returns of \$4.2 trillion over the lifetime of new infrastructure – a \$4 benefit for each dollar invested (Hallegatte S. et al., 2019).

3. Protecting the marine environment and biodiversity

Recent regulatory actions for the protection of the marine environment and conservation and the sustainable use of marine biodiversity,⁷ include the following:

a) Implementing the IMO 2020 sulphur limit

Limiting SO_x emissions from ships is important to improve air quality and protect both human health and the environment. On 1 January 2020 an IMO regulation entered into force that reduces the limit on the sulphur content in ship fuel oil from 3.5 to 0.5 per cent. In designated emission control areas, the limit remained even lower, at 0.1 per cent.⁸ To further support enforcement, in December 2020, the MEPC adopted several amendments to MARPOL Annex VI, which will enter into force on 1 April 2022. These mainly relate to definitions and onboard sampling of the sulphur content of fuel oil, fuel verification

⁶ According to UNCTAD, investment in transport infrastructure, power generation/distribution (except renewables) and telecommunications was down 60 per cent compared to 2019, <https://unctad.org/programme/covid-19-response/impact-on-trade-and-development-2021#aTransport>.

⁷ As regards negotiations on a new international legal instrument under the UNCLOS on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction, discussions on a broad range of issues, including marine genetic resources; area-based management tools, including marine protected areas; environmental impact assessments; and capacity-building and marine technology transfer, were expected to continue during the fourth session of the Intergovernmental conference on an international legally binding instrument, scheduled to be held from 23 March to 3 April 2020, but were postponed due to COVID-19 crisis (for information on discussions at earlier sessions, see UNCTAD, 2019, 2020a). The next session of the conference was scheduled to take place from 16 to 27 August 2021, but due to the COVID-19 situation, it was again postponed to the earliest possible available date in 2022, preferably during the first half of the year (see A/75/L.96).

⁸ The four emission control areas are: the Baltic Sea area; the North Sea area; the North American area (covering designated coastal areas of Canada and the United States); and the United States Caribbean Sea area (around Puerto Rico and the United States Virgin Islands).

procedures, and consequent related amendments to the International Air Pollution Prevention (IAPP) certificate.

From 1 January 2020, Flag and Port State controls have had to make sure that ships comply with the 0.5 per cent sulphur limit. To do so, shipowners and charterers can adopt three different approaches:

- a) Use a compliant fuel which is low enough in sulphur such as VLSFO or MGO;
- b) Use alternative fuels such as liquefied natural gas (LNG), methanol, liquefied petroleum gas (LPG), hydrogen fuel cells, or biofuels which emit very small amounts of SO_x; or
- c) Use equivalent methods, including fitting or retro-fitting their ships with exhaust gas cleaning systems, also known as scrubbers. Scrubbers may be open loop –discharging wash water into the sea – or closed loop discharge residues to adequate reception facilities ashore.

During 2020 and the first half of 2021, implementation, primarily with the use of VLSFO, was relatively smooth, and compliant fuel oil was widely available globally (IMO, 2021e). There was some disruption by COVID-19, and several more ports and countries banned open-loop scrubber wash water discharge. Global enforcement of the new regulation was facilitated, however, by a ban on the carriage of non-compliant fuel.

Liability for compliance mainly rests with shipowners – who typically supply the fuel. In the case of charterparties, usually voyage charters, the contract may require the shipowner to warrant that the vessel complies with international rules and regulations. For time charters, on the other hand, it is the charterers who usually purchase and provide the fuel; therefore contractual provisions may shift responsibility for compliance with applicable Sulphur Content Requirements to the charterers, so the liability and the associated risk is divided between them and the shipowners, who warrant that the vessel itself is compliant. Examples of relevant clauses include the BIMCO's Marine Fuel Sulphur Content Clause for Time Charter Parties (BIMCO, 2018), and INTERTANKO's Bunker Compliance Clause (INTERTANKO, 2018). In order to increase clarity, contracting parties should consider incorporating such clauses in charterparties.

Further special regulation has been agreed for the environmental protection of Arctic waters. In June 2021, the MEPC adopted amendments to MARPOL Annex I that prohibit the use, and carriage for use of heavy fuel oil by ships in Arctic waters on and after 1 July 2024. Ships that meet certain standards on oil fuel tank protection would need to comply on and after 1 July 2029.

However, up to 1 July 2029 a Party with a coastline bordering Arctic waters may temporarily waive the requirements for ships flying its flag and operating in waters that are subject to that Party's sovereignty or jurisdiction. After that date, exemptions and waivers would no longer apply. Currently, MARPOL Annex I regulation 43 prohibits the use or carriage of heavy-grade oils on ships in the Antarctic; and under the Polar Code⁹ ships are encouraged not to use or carry such oil in the Arctic. The new regulation will help protect these fragile areas further. However, its impact could be significantly reduced by the waivers and exemptions for contracting States with a coastline bordering Arctic waters, until 2029.

b) Ballast water management

One of the greatest threats to the world's oceans and a major threat to biodiversity is ships discharging untreated ballast water. This has severe consequences for public health and has environmental and economic implications for fisheries and the exploration of marine genetic resources (see also UNCTAD 2011, 2015b). In December 2020, the MEPC adopted amendments to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the BWM Convention) which aims to prevent the introduction and proliferation of non-native species following the discharge of untreated ballast water from ships. These amendments, which are expected to enter into force on 1 June 2022, relate to the commissioning and testing of ballast water management systems and to the form of the International Ballast Water Management Certificate. As of 31 July 2021, the BWM Convention had 86 Contracting States representing 91 per cent of the GT of the world's merchant fleet.¹⁰

c) Biofouling

A prominent, but underestimated, source of microplastic pollution is antifouling coatings on ships (Dibke C. et al., 2021). In June 2021, the MEPC adopted amendments to the IMO Convention for the Control

⁹ For more information, see UNCTAD, 2015a.

¹⁰ <https://wwwcdn.imo.org/localresources/en/About/Conventions/StatusOfConventions/StatusOfTreaties.pdf>.

of Harmful Anti-fouling Systems on Ships, 2001 (AFS Convention)¹¹, to prohibit anti-fouling systems containing cybutryne. This would apply from 1 January 2023 or, for ships already using such a system, at its next scheduled renewal after 1 January 2023, but no later than 60 months following the last application to the ship of such an anti-fouling system.¹²

d) Oil-pollution from shipping

An important risk of pollution is oil spills from ships, not just from oil tankers, but also from other maritime transport – container ships, chemical carriers, general cargo ships and passenger or cruise vessels. Oil spills, and the resultant clean-up operations, can seriously affect marine and coastal environments, from both physical smothering and the effects of toxins. There are also costly and wide-ranging economic implications (Asariotis R., Premti A., 2020). The risks are particularly high for vulnerable coastal developing states and ocean economies such as SIDS that rely heavily on fisheries, aquaculture and tourism, and are being heightened by bigger vessels carrying high volumes of bunker fuel oil.

The ‘Wakashio’ bunker oil spill off the coast of Mauritius in 2020 demonstrated the devastating consequences of oil spills for the economies and tourism industries of coastal countries, as well as for ecosystems and biodiversity, further endangering corals, fish, and other marine life (PCC 2018). This spill also highlighted the need for international legal instruments in this field and for all States to adopt the latest of these.

Oil spills raise serious issues of liability and of compensation, including for the costs of reinstating the environment. In this respect there is a comprehensive international regime in place on liability and compensation for oil pollution damage caused by persistent oil spills from tankers (CLC-IOPC Fund regime) (UNCTAD, 2012).¹³ Unfortunately, this did not apply in the Wakashio case, as the spill was of bunker oil from a bulk-carrier, not from an oil tanker (Asariotis R., Premti A., 2020; UNCTAD 2020b).

Bunker oil spills from ships other than oil tankers are covered by the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (Bunkers Convention).¹⁴ This Convention aims “to ensure that adequate, prompt, and effective compensation is available to persons who suffer damage caused by spills of oil, when carried as fuel in ships’ bunkers”. Modelled after the International Convention on Civil Liability for Oil Pollution Damage, 1992 (CLC), the Bunkers Convention has many similar provisions but the amount of liability may be limited (Art. 6), in accordance with any applicable national or international regime such as the Convention on Limitation of Liability for Maritime Claims (LLMC), 1976, as amended in 1996. As a result, the compensation available to claimants is significantly lower than that available under the CLC-IOPC Fund regime for oil pollution from tankers.¹⁵ Given the continuing growth in sizes of ships of all types, the issue of liability for bunker oil spills from ships other than tankers may need to be revisited.

A Claims Manual for the Bunkers Convention

For the IOPC FUNDS, there is a Claims Manual but there is no corresponding manual for the Bunkers Convention. During its 107th session in December 2020, the IMO Legal Committee supported the development of an ‘IMO Claims Manual for the Bunkers Convention’ to guide national courts, claimants, shipowners and insurers in their interpretation of the Convention (IOPC FUNDS, 2019). This manual would differ from the 1992 Fund Claims Manual but should be consistent with it. The Committee agreed that, in cooperation with protection and indemnity clubs, a more detailed proposal would be taken forward on an intersessional basis, (IMO, 2020b, pg. 27). Then in July 2021 at its 108th session the Legal Committee expressed its broad support for the development of dedicated and authoritative guidance for claimants within the scope of the Convention (IMO, 2021c). Such a manual would assist claims under the Convention, but it should also reflect the needs of vulnerable coastal developing countries and SIDS, particularly on the question of limitation of liability.

¹¹ For some background information, see *Review of Maritime Transport 2020*.

¹² The Convention, which as of 31 July 2021, was in force for 91 Contracting States representing 95.93 per cent of the GT of the world’s merchant fleet, defines “anti-fouling systems” as “a coating, paint, surface treatment, surface or device that is used on a ship to control or prevent attachment of unwanted organisms”. It already prohibits the use of harmful organotin compounds in anti-fouling paints used on ships and establishes a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems. These harmful substances include the biocide chemical compound cybutryne, for which scientific data has indicated it causes significant adverse effects to non-target organisms and the environment, especially to aquatic ecosystems, and therefore needs to be controlled.

¹³ 1992 Civil Liability Convention (CLC), 1992 Fund Convention and 2003 Supplementary Fund Protocol. See further <https://www.iopcfunds.org/>.

¹⁴ <http://library.arcticportal.org/1616/1/6693.pdf>.

¹⁵ See, [https://www.imo.org/en/About/Conventions/Pages/Convention-on-Limitation-of-Liability-for-Maritime-Claims-\(LLMC\).aspx](https://www.imo.org/en/About/Conventions/Pages/Convention-on-Limitation-of-Liability-for-Maritime-Claims-(LLMC).aspx).

Limitation of liability under IMO conventions

In certain circumstances a shipowner may lose the statutory right to limitation of liability under some international conventions. The IMO Legal Committee has also been discussing a unified interpretation on the relevant test for breaking the shipowner's right to limit liability (see IMO, 2019a, 2019b). In December 2020, the Committee established a remote intersessional group to draft such a unified interpretation and consider the vehicle for its adoption – which would be either the Conference of States Parties, the Assembly, or the Legal Committee. Drawing on this work, a related draft Assembly Resolution has since been finalized by the IMO Legal Committee at its 108th session and submitted for consideration by the Assembly at the end of the year (IMO, 2021c).

C. LEGAL AND REGULATORY IMPLICATIONS OF THE COVID-19 PANDEMIC

The COVID-19 pandemic is causing delays and unprecedented supply-chain disruptions that affect the performance of a wide range of contractual obligations and can lead to the need for costly litigation, involving complex jurisdictional issues in a global context. This could be on such a scale as to overwhelm some legal and administration of justice systems, with implications for global governance and the rule of law.¹⁶

Avoiding this outcome will require collective and coordinated action by governments and industry. This could involve, for example agreeing contractual extensions, showing restraint in pursuing legal rights and claims, and resolving disputes through mediation and arbitration, as well as strengthening formal and informal dispute resolution mechanisms and institutions. It could also involve commercial risk-allocation through standard clauses drafted to address contractual rights and obligations in the light of the circumstances associated with the pandemic.

As part of UN action in response to the COVID-19 pandemic, UNCTAD and the UN regional Commissions are currently implementing a joint technical assistance project: “Transport and trade connectivity in the age of pandemics: Contactless, seamless and collaborative UN solutions”.¹⁷ UNCTAD is leading several of these components, including work on the international commercial transport and trade law implications of the pandemic, and has already published two briefing notes: one on Cargo Claims, (UNCTAD, 2021d; the other on International Sale of Goods (UNCTAD, 2021e)). These highlight some of the complex commercial law issues and implications to encourage discussions between the affected parties and consider appropriate measures for future agreements.

One issue which has clearly come to the market's attention is that of delays in documentation. This may provide an impetus for more commercial parties to adopt secure electronic solutions that are already available and have been accepted by the market. However, with increasing reliance on electronic interactions, they will also have to manage any associated cyber-risks and enhance their cybersecurity systems.

Lessons learnt from the global pandemic should generally encourage carriers, insurers, and cargo interests to take leaps forward and make the best use of technology, both to minimize disruption, and to allocate fairly any commercial risks that arise from unforeseen events beyond the control of the contracting parties. Trade associations can help in this respect by devising standard form terms for inclusion into commercial contracts. In addition, governments and policymakers should consider temporary financial support to avoid widespread business failure and protect the essential flow of goods across all trade routes.

D. OTHER LEGAL AND REGULATORY DEVELOPMENTS AFFECTING TRANSPORTATION

1. Combating fraudulent registration and registries

In 2019, following reports by several members on the fraudulent use of their flags, the IMO Legal Committee, agreed on measures to prevent fraudulent ship registration and registries (UNCTAD, 2019). The Committee supported the development of a comprehensive database of registries to be held on the publicly available contact points module of the IMO Global Integrated Shipping Information System.

¹⁶ Note in this context also SDG 17, which focuses on partnership for the goals, and SDG 16 on peace, justice, and strong institutions.

¹⁷ <https://unctad.org/project/transport-and-trade-connectivity-age-pandemics>.

This would contain the names and contact details of national governmental bodies or authorized/delegated entities in charge of the registration of ships, as well as other relevant information. The Committee also approved best practices to combat fraudulent registration and registries of ships, and established an intersessional correspondence group to consider various proposals in greater detail (IMO, 2019b). This group, in which UNCTAD participated, has since prepared a draft Resolution on “Encouragement of Member States and all relevant stakeholders to promote actions for the prevention and suppression of fraudulent registration and fraudulent registries, and other fraudulent acts in the maritime sector”. This was finalized by the IMO Legal Committee at its 108th session in July 2021 and submitted to the IMO Assembly, for consideration in December 2021 (IMO, 2021c). The intersessional group had also proposed future work on a corresponding IMO study, which was agreed upon by the IMO Legal Committee. It should be noted that there is already an International Convention on the Registration of Ships, 1986,¹⁸ which provides some safeguards against fraudulent ship registration, and was adopted under the auspices of UNCTAD, but it has not entered into force.

2. Multimodal transport discussions at UNCITRAL and ESCAP

Multimodal transport can be a key driver of sustainable development, by enabling existing capacities and infrastructure to be used more effectively and promoting a better balance between transport modes across supply-chains. However, the international legal framework is lagging behind. Despite numerous attempts, no uniform legal regime on multimodal transport has entered into force internationally (UNCTAD, 2003). Instead, the existing framework consists of a complex jigsaw of international conventions designed for unimodal carriage, regional and sub-regional agreements, national laws, and standard term contracts. This is associated with a lack of legal certainty and a need for costly evidentiary enquiries and litigation.

ESCAP – Harmonizing multimodal legal frameworks in Asia and the Pacific

In August 2020, a ESCAP Expert Group Meeting, in which UNCTAD participated, discussed options for harmonizing the legal framework for multimodal transport at the regional level. The Expert Group requested a more detailed analysis of the advantages, disadvantages and specificities of each option – including the level of commitment needed, the timelines for completion and the potential for causing additional fragmentation or legal conflicts. (ESCAP, 2020).

In March 2021 this analysis was discussed by a second Expert Group Meeting (ESCAP, 2021). Several participants highlighted the value of a single comprehensive legal instrument, but the meeting concluded that would be more practical to take a step-by-step approach. This included consideration of the following possibilities:

- i. Tailor-made legal solutions addressing specific modal interfaces.
- ii. A single transport document that could serve as evidence of a contract.
- iii. Digitalization of consignment notes.
- iv. A framework agreement together with soft law solutions.
- v. Solutions building on existing infrastructure networks and agreements, such as an instrument on multimodal transport operations envisaged under the Intergovernmental Agreement on Dry Ports.

The secretariat was requested to take these elements into account and to provide relevant background material for the next meeting.

UNCITRAL – Negotiable multimodal transport documents

In July 2019, at the 52nd session of UNCITRAL, the Government of China presented a proposal on possible future work by UNCITRAL to develop a legal framework for railway consignment notes. This noted that railway transportation had some advantages, such as shorter distances, greater speed, and less vulnerability to weather. However, unlike ocean bills of lading which were used for maritime transport, international railway consignment notes did not serve as documents of title and were not used for the settlement and financing of letters of credit. UNCITRAL considered that the proposal could be of practical significance for world trade, and particularly for the economic growth of developing countries. However, given the complexity of the issues, the Commission decided, as a first step, to request the Secretariat to coordinate with other relevant organizations and conduct research on the legal issues related to the use of railway or other consignment notes, (UNCITRAL, 2019, paras. 216 –217).

¹⁸ Text is available at UNCTAD's website, <https://unctad.org/topic/transport-and-trade-logistics/policy-and-legislation>.

Expert Group meetings were held in 2019 and 2020, and in May 2020 their conclusions were presented to the 53rd annual session of UNCITRAL (UNCITRAL, 2020a). The Commission recognised the value of electronic transport documents, particularly for the new supply chain and logistics models expected to develop following the COVID-19 disruption and requested the secretariat to start preparatory work, in close coordination and cooperation with relevant international organizations, on a new international instrument on multimodal negotiable transport documents that could be used for contracts not involving carriage by sea (UNCITRAL, 2020b, para.16(e)).

In February 2021, there was a Third Expert Group Meeting on a ‘New International Instrument on Negotiable Multimodal Transport Documents’, with the participation of international organizations, including UNCTAD, as well as practitioners and academia. In April 2021, an open webinar on ‘International experiences with the dematerialization of negotiable transport documents’ was held (UNCITRAL, 2021a). At its 54th session in July 2021, UNCITRAL welcomed the preparatory work and confirmed its strong interest in the project. The Commission agreed that “the primary purpose of a new international instrument should be to ensure legal recognition of a medium neutral negotiable transport document in different modes of transport and that, for that purpose, it was desirable to focus first on negotiable transport documents and subsequently consider whether other types of transport documents accepted by banks for documentary credit should also be encompassed”. The Commission also agreed on the need for proper coordination and interface with the liability regimes provided under existing conventions on international carriage of goods by various modes and invited the secretariat to continue its preparatory work in close coordination with other organizations currently working on or exploring solutions to enable the use of a negotiable transport document in the rail plus or other multimodal context, as well as other organizations with relevant expertise, or representing relevant industries (UNCITRAL, 2021b).

Given the broad substantive scope of the proposed future legal instrument, public and private stakeholders both in multimodal transport and in all the different modes are encouraged to participate in any related further work. For small traders in developing countries, a key concern will be adequate liability for cargo loss or damage. UNCTAD will continue to participate in any related work under the auspices of UNCITRAL.

3. Status of conventions

A number of international conventions in the field of maritime transport have been prepared or adopted under the auspices of UNCTAD. During the current reporting period, only the status of the Hamburg Rules changed, with one additional accession (see <https://unctad.org/webflyer/review-maritime-transport-2021>). For additional information, see <https://unctad.org/ttl/legal>. For official status information, see the United Nations Treaty Collection, available at <https://treaties.un.org>.

E. MARITIME TRANSPORT WITHIN THE WTO TRADE FACILITATION AGREEMENT

Implementing trade and transport facilitation procedures efficiently, and in line with international guidelines reduces time and costs, and makes for more agile logistics supply chains. This will involve simplifying maritime and trade procedures, and integrating new technologies in trade and transport facilitation so as to standardize and harmonize for cross border trade in goods.

The COVID-19 crisis has highlighted the many national regulations and administrative bottlenecks involved in the emergency supply of medical equipment, drugs – as exemplified by the ongoing vaccine supply chain. Minimizing disruption in the logistics supply chains, including maritime transport, will mean extending international frameworks, building more public-private partnerships, and further digitalizing trade facilitation.

Such reforms will rely on harmonized international frameworks such as the WTO TFA and the IMO FAL Convention. These instruments, which provide governments with guidance and incentives in reforming trade facilitation measures, are paving the way for digitalization, transparency, and rationalization of administrative formalities. They already serve as the bases for many bilateral and regional trade facilitation agreements, and other initiatives are emerging as complementary building blocks.

1. Implementation of the WTO TFA

The WTO Trade Facilitation Agreement aims to boost the speed and efficiency of cross-border trade procedures through 36 measures and covers four areas: transparency, fees and formalities, customs cooperation, and transit. As of July 2021, 154 WTO members have ratified the TFA, meaning that 94 per cent of WTO Members apply the agreement on a most-favoured-nation basis.

However, the agreement is not being implemented by all members – only by 71 per cent of developing countries and by 36 per cent of LDCs. The reality on the ground may even be less positive, as it is not sure that countries fully comply in practice with their notified implementation schedules.

Trade facilitation makes ports and shipping more efficient. Those developing countries and LDCs that implement the TFA tend to have a higher turnover of container ships at port. This is evident from the UNCTAD Liner Shipping Connectivity Index, which shows that 13 per cent of the variance of the time that container ships spend in port can be statistically explained by differences in TFA implementation (UNCTAD, 2016).

To help developing countries and LDCs implement the agreement, the TFA provides for Special and Differential Treatment (SDT) through which those countries can acquire the necessary capacity. To benefit from SDT, developing countries and LDCs need to define their needs for technical assistance and capacity building (TACB). As of July 2021, 119 developing and least developed members had notified their intention to use the SDT provisions.

Recipients of TACB have made progress in implementing TFA commitments. For LDCs that have received TACB support, OECD indicators and WCO-Time Released Study data reveal substantial reductions in customs clearance times. The progress is especially evident in transparency on customs rules and regulations, customs automation, and in the timely release and clearance of goods (OECD/WTO, 2019).

2. Measures related to maritime transport

The TFA presents the regulatory requirements for the release and clearance process of export, import and transit operations and covers procedures linked to customs clearance and to standards and controls from other border agencies (Bureau of Standards, Ministry of Agriculture, etc.). Article 7 of the TFA addresses the Release and Clearance of goods, including customs operations such as pre-arrival processing, risk management, and trade facilitation measures for authorized operators. Article 10 on Formalities connected with Importation, Exportation and Transit, addresses the relations between border agencies and the business community, and includes provisions for single window implementation, and the use of international standards and of customs brokers. Finally, articles 8 and 12 cover Border Agency and Customs Cooperation.

Some provisions are more fully implemented than others (WTO, 2021). The higher implementation rates are those for the use of customs brokers at 87 per cent, for pre-arrival processing at 74 per cent and electronic payments at 69 per cent but other provisions involving IT infrastructure such as the single window are lower at 45 per cent. Only 59 per cent implement Article 8 on Border Agency Cooperation.

The value of the TFA is demonstrated by the World Bank Logistics Performance Index (LPI) which shows that implementation of trade facilitation measures is positively correlated with logistics performance, with the greatest benefits from Article 1 on Publication, Article 6 on Fees and Charges, Article 8 on Border Agency Cooperation and Article 10 on Formalities (UNCTAD, 2016).

3. The value of public-private dialogue

Any successful trade reform relies on cooperation between public administrations and the business community. With trust and dialogue among stakeholders, the trade ecosystem can develop sustainably, and public reforms can respond to the needs of the trader community. This principle is embedded in a number of measures in the TFA – on border agency cooperation, customs cooperation, consultations, and the opportunity for the private sector to comment before adopting a legal text.

The most important component in this context is article 23.2 on the obligation to set up in each country a National Trade Facilitation Committee (NTFC). The NTFC should comprise public and private stakeholders who can devise a coherent and coordinated strategy and champion and drive the trade facilitation agenda. NTFCs may gather all border agencies, business associations, freight forwarders associations, as well as the port authorities, agencies and private sector stakeholders working on maritime trade. According to an UNCTAD survey, 40 per cent of the NTFC members come from the private sector (Ugaz, 2019).

In Kenya, for example, the NTFC has set up a Technical Working Group on the Mombasa Port Charter which includes the Kenya Port Authority. In Namibia, the NTFC comprises the Namibia Port Authority as well as the Walvis Bay Port users' association. This public-private dialogue proved useful for defining policies, improving consultations, and resolving conflict, and during the COVID-19 crisis has been used to coordinate emergency guidelines for supplies coming through ports.

Public-private dialogue and inter-agency cooperation are often manifested in the port community system (PCS) as prescribed in TFA Article 8 and Single Window, Article 10.4. The PCS is the electronic exchange platform that interfaces with existing IT systems within a port environment, including all the stakeholders, private and public. In the Port of Valencia, Spain the PSC provides for the electronic exchange of supply chain information for B2B, B2G and G2B. Recently, these systems have started to link up internationally with port-to-port data exchange– facilitated by the International Port Community Systems Association Network of Trusted Networks. In addition to pre-arrival and arrival processing this enables greater transparency in the supply chain through track and trace.

Another critical issue for public-private dialogue is the safety and well-being of workers. Ports and other actors can for example, cooperate to improve crew changeover processes and ensure standards of procedure and risk-management protocols at the national level so that imperatives of operational continuity do not compromise the safety and well-being of workers. This issue has also come to the fore during the pandemic when seafarers have suffered from blockades on ships for several months and from loss of employment and were often in desperate conditions.

The benefit of public-private cooperation has been demonstrated in the ‘landlord port’ system. In this case, border agencies deal with regulatory policies and administer the supply chain while the private sector oversees the handling and storage of shipments as well as the maintenance of port terminals. This allows the government to upgrade its systems for customs clearance and other regulatory treatments of goods while the business sector can improve hard infrastructure, thus boosting the port competitiveness.

4. Improving technology and extending digitalization

Trade facilitation is steadily being transformed by new technology. The TFA encourages smart solutions in the clearance of goods – as with Article 1.2 on information available through the internet, Article 10.4 on the electronic single window, or Article 7.2 on electronic payments.

The electronic single window (eSW) has revolutionized supply chains by interconnecting border agencies, traders, and logistics providers on the same IT platform. It provides a single point of submission for trade documents and information and allows border agencies to share documents and data electronically and establish common procedures for processing and control.

Rwanda, for example, has built the Rwanda Electronic Single Window (ReSW) using UNCTAD’s Automated System for Customs Data (ASYCUDA). Since its introduction in 2012, the ReSW has connected approximately 20 government agencies and now provides more than 12 single window services and applications. Since 2020, new Partner Governmental Agencies like the Rwanda Agriculture and Livestock Inspection and Certification Services and the National Agricultural Export Development Board have been benefiting from automated applications in the single window system. In 2014 alone, the ReSW reduced the average clearance time from 11 to 1.5 days. In 2020, the total saving for traders on direct cost to buy forms and pay clearing agents to manually fill the form and follow up the approval in the ministries exceeds 9 million USD.

Rwanda is landlocked, so the Rwanda Revenue Authority uses the ReSW to connect with the Port Authorities of Mombasa (Kenya) and Dar es Salaam (Tanzania) and has established offices in the East Africa Community Single Customs Territory. In addition, the ReSW is interlinked with the customs systems of Uganda and Kenya on the Northern Corridor and with the Tanzanian customs system on the Central Corridor. Once imports are processed, an exit note is issued through the single window and information is shared to the ports and the revenue authorities, enabling them to clear the goods. The ReSW relies on the corridor management institutions and also the Regional Electronic Cargo Tracking System which since 2020 has helped track and trace goods on the Northern Corridor to and from the Port of Mombasa.

Single windows can also be built for maritime systems. A maritime national single window (MNSW) can be used to harmonize and exchange data among the relevant port agencies, providing a single point of electronic document submission for port clearance. In Singapore, for example, the Government, in partnership with the IMO, has recently launched a Single Window for Facilitation of Trade that is aligned with the WTO TFA and the IMO FAL Convention recommendations on the electronic exchange of data (see section F of this chapter).

NTFCs can facilitate communication and coordination among the different stakeholders to create synergies and ultimately establish single points of access along the supply chain covering transport and trade procedures.

Other IT applications designed to undertake pre-arrival processing such as ASYHUB expedite customs clearance procedures, and minimize the time and cost of trade operations (section C of this chapter).

Table 6.1 Key performance indicators of the Kenya Trade Information Portal

Kenya Trade Information Portal (52 trade procedures)		
<ul style="list-style-type: none"> • 44 of 52 procedures have been simplified • 110 hours saved <i>2.5 on average</i> 	<ul style="list-style-type: none"> • 50 steps eliminated <i>1.1 on average</i> • 53,000 KES saved fees (\$480 saved) <i>1,205 KES average reduction (\$10.9)</i> 	<ul style="list-style-type: none"> • 20 steps now accessible online • 66% of all steps are now online <i>(baseline: 46%)</i> • 66 documents eliminated <i>1.5 on average</i>

Source: Kenya Trade Information Portal, <https://infotradekenya.go.ke>.

Another ICT innovation, based on UNCTAD technology, is the Trade Information Portal (TIP). Governments can use this online portal to document and publicize trade procedures for export, import and transit. Each TIP offers step-by-step guides to trade-related procedures. The TIP, which is coordinated by the Secretariat of the National Trade Facilitation Committee, simplifies and streamlines procedures while increasing transparency of trade information on export, import and transit requirements. In this way countries can fulfil their obligations in WTO TFA, article 1.2 on information availability through the internet.

Today, 29 TIPs, based on UNCTAD technology, are being implemented globally by UNCTAD and the International Trade Centre. Results have been very positive. TIPs are most advanced in East Africa, where in Kenya, for example, greater transparency and simplification of a total of 52 trade procedures so far have reduced the time spent waiting in the queue, at the counter and in between steps by 110 hours, and the administrative fees for these 52 procedures by \$482, i.e., about \$11 per trade procedure on average (table 6.1).

An essential element of measures to improve trade facilitation is digitalization, which is part of a paperless environment. All trade procedures can then be carried out online, reducing time and cost for the traders and increasing transparency and market access. These smart solutions also enable better public administration of trade and, by minimizing the use of paper and carbon-based activities, can reduce CO2 emissions (Duval, 2021). However, these benefits will only be achieved through sustained intergovernmental and public-private sector cooperation at all levels (box 6.1).

Box 6.1 The Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific - Maritime implications

The Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific (ESCAP, 2021) aims to accelerate digitalization of trade in support of sustainable development. After four years of negotiations, the Economic and Social Commission for Asia and the Pacific (ESCAP) adopted the treaty in May 2016 and opened it to all its 53 member States.

The Agreement entered into force on 20 February 2021, following accession or ratification of Azerbaijan, the Philippines, the Islamic Republic of Iran, Bangladesh, and China. Armenia and Cambodia have also signed the treaty. Several other ESCAP member States are in the process of accession, in time for the first meeting of the Paperless Trade Council. This body will oversee the implementation of the Agreement starting in March 2022.

Designed as an enabling rather than a prescriptive instrument, the Agreement is accessible to countries at all levels of development. It contains general principles and other provisions to facilitate pilot testing and implementation of paperless trade solutions suitable for each country, while promoting interoperability across systems and public-private sector collaboration within and across borders. The Agreement complements the WTO Trade Facilitation Agreement and supports its full digital implementation. Trade cost reductions expected from the full implementation of cross-border paperless trade are estimated at 10-30 per cent of existing transactions costs, depending on the current state of paperless trade development in the participating countries (ESCAP, 2017).

This agreement will boost the digitalization of maritime transport in Asia and the Pacific, which is home to nine of world's ten busiest ports and has the bulk of global maritime trade. It should also provide a strong political and institutional basis to improve the interconnectivity of maritime single windows and port community systems. It will also help digitalize maritime documents such as bills of lading, packing lists and manifests that are used in governmental trade compliance and in processes agreed between traders and transport and logistics service providers. As these documents are digitalized, they need to be shared and legally recognized across both in maritime single window/port community systems and trade single window systems, and can be shared across all paperless systems along international supply chains. Backed by this agreement, the Paperless Trade Council can engage relevant international organizations, private sector stakeholders and development partners to fill the capacity gaps and facilitate interoperable solutions.

Source: ESCAP.

F. FAL CONVENTION

The WTO TFA addresses issues in relation to the clearance of goods. The Convention on Facilitation of International Maritime Traffic (FAL Convention), on the other hand, which is managed by the IMO, focuses on the formalities and procedures for ships calling in ports, including those related to the arrival and departure of seafarers. Trade facilitation initiatives are likely to involve both agreements, so careful coordination and integration will be needed at the national level in order to ensure that regulations and procedures are aligned.

1. Main provisions of the Convention

The FAL Convention has both compulsory and recommended provisions. Contracting governments can thus comply to the extent they are able to. One of its most important measures concerns the number of documents that shore authorities can require, which it limits to 12. For the first seven of these, the IMO has developed standardized forms, widely known as FAL forms, which include General Declaration (FAL Form 1), and Cargo Declaration (FAL Form 2). Nevertheless authorities can also require other documentation pertaining, for example, to the ship's registration, measurement, safety, pollution prevention, or safe manning. The FAL Convention also contains provisions to prevent, report on, and resolve stowaway incidents, as well as standards and recommendations on treatment of stowaways while on board ships.

For the FAL Convention, significant efforts have been made to promote digitalization, with new provisions to allow for data to be submitted and shared electronically. Since 2019, public authorities in ports must set up the electronic exchange of information, and may only use paper forms in exceptional circumstances. To reduce duplication, the FAL Convention also recommends the single window approach, aligned with Article 10.4 of the TFA, whereby ship reporting parties can fulfil the requirements of the various authorities by providing information once to a single entry point.

In 2021, the FAL Committee approved amendments to the Convention that further promote digitalization. Once these are formally adopted, the FAL Convention will no longer refer to paper forms but to a list of data requirements. In addition, the single window will become mandatory. These amendments are expected to be adopted by the FAL Committee in 2022 and to enter into force in January 2024.

The FAL Committee also aims to improve the quality of data exchange between ships and ports. An important contribution to this is the IMO Compendium on Facilitation and Electronic Business which provides a common terminology so that shipping and ports use the same definitions and formats. The IMO Compendium can also be used by other IMO Committees when preparing their requirements on electronic reporting and information exchange.

Box 6.2 IMO Compendium on Facilitation and Electronic Business

The IMO Compendium on Facilitation and Electronic Business aims to harmonize the essential standards for ship clearance and to support electronic data exchange between ships and ports. It was developed by the IMO in partnership with ECE, WCO and ISO.

The Compendium has two critical components: the IMO Data Set (IDS) and the IMO Reference Data Model (IRDM). The IDS provides unique identification, and a common definitions and representations/formats for all the data elements. The IRDM defines how the data elements relate to each other – reflecting the relationships between the different areas of information.

Initially, the IMO Compendium was limited to the FAL Convention (i.e., FAL forms). This led to a partnership agreement between ECE, WCO and ISO to develop and maintain the IRDM. To ensure full interoperability between the most relevant standards, the data elements are mapped across the main models – UN/CEFACT, WCO Data Model and ISO. The data exchange syntax for electronic messages, is provided by the corresponding organizations.

Since 2019, the scope of the IMO Compendium has been extended. It now covers other IMO instruments (e.g., MARPOL and SOLAS) and other data specifications related to the ship/shore interface. Since 2020, the IMO Compendium has included the Maritime Declaration of Health (MDH), a requirement of the International Health Regulations (IHR) under the purview of the WHO. The IMO Compendium also includes IMO data on stowaways as well as operational and real-time data to help optimize port calls and decarbonize shipping. More data sets are currently being prepared by the IMO Expert Group on Data Harmonization, a group of Member States and industry experts set up to maintain the IMO Compendium. Data sets related to shipping certificates, ship registry and company details, ballast water reporting, and the verified gross mass of containers are being considered for inclusion in 2022.

Source: IMO.

In 2021, having learned from the COVID-19 pandemic, Member States are adding a new section addressing a public health emergencies of international concern (PHEIC) to the FAL Convention. To help sustain global supply chains during a PHEIC, contracting governments and their relevant public authorities must ensure that ships and ports remain fully operational. And they should designate port workers and crew members who are in their territory as key workers or equivalent, regardless of their nationalities or the flag of their ship. National authorities are also advised not to introduce obstacles to crew movements for repatriation, crew changes or travel. The new amendments to be adopted in 2022 also encourage governments to disseminate information about public health matters and the protection measures expected from ship operators.

2. FAL Convention requirements for maritime single windows and port community systems

When a ship calls at a port, the master or the shipping agent has to fulfil regulatory and port entry requirements – for purposes of safety, security, and environmental protection. This includes submitting information on the ship, and its voyage, cargo, crew, and passengers. This information is used for various clearance and port call processes – including pre-arrival, arrival, berthing, loading/unloading, embarkation/disembarkation, clearance, and departure/unberthing.

Since 2019, the IMO has required this information to be exchanged electronically. On the ship this could involve the master, ship agents, and shipping lines, while those involved ashore include maritime administrations, and the authorities concerned with customs, police/law enforcement, immigration, public health, port administration, and agriculture.

The IMO also recommends that data is submitted through a single window using software that distributes the information to relevant stakeholders according to the system rules and user agreements. The single window in port covers business-to-government and government-to-business exchanges.

In 2019, IMO produced guidelines for setting up a maritime single window (MSW) to help Member States and software developers, with examples of different approaches in existing systems. (FAL.5/Circ.42/Rev.1). Developing such systems is complex and involves multiple stakeholders based on an appropriate legal framework for data requirements and sharing.

Other forms of eSW include national single windows (NSW) or customs or trade single windows (TSW). Possible gateways into the various systems are port community systems (PCS). As defined by International Port Community Systems Association (IPCSA), a PCS is a neutral and open electronic platform enabling the intelligent and secure exchange of information between public and private stakeholders.

Since 2019, IMO has encouraged Member States that are more advanced in MSW implementation to exchange know-how and experiences with other Member States seeking assistance. Norway, for example, has made available the source code of a generic maritime single window system developed as part of a project with the IMO. Its design is of particular interest to SIDS and it has been implemented in Antigua and Barbuda. It is accessible at <https://github.com/Fundator/IMO-Maritime-Single-Window>.

In 2021, the IMO launched two technical cooperation initiatives. One aims to develop and implement a maritime single window in a medium-size port based on Singapore's experience – the Single Window for Facilitation of Trade (SWiFT). In April 2021, there was call for interest to identify the pilot country. The second project is the 'World Bank Group/IMO maritime single window for SIDS' which will provide Fiji with technical support to adopt and implement an MSW based on the source code from Norway, and the experience of Antigua and Barbuda.¹⁹

The amendments to the FAL Convention approved in 2021 will make the use of the single window mandatory. Public authorities must also try to ensure that the information is submitted electronically only once and re-used as much as possible.

During the COVID-19 pandemic, a group of global industry associations in consultative status with the IMO representing the maritime transportation and port sectors agreed on a joint statement calling for intergovernmental collaboration to accelerate the digitalization of maritime trade and logistics. The IMO supported the joint statement and has encouraged collaboration between maritime supply chain industry stakeholders and Member States and called for intergovernmental collaboration at local, national, and regional levels.²⁰

¹⁹ <https://www.imo.org/en/MediaCentre/PressBriefings/Pages/07-IMO-maritime-data-solution-available-after-launch-in-Antigua-and-Barbuda-.aspx>.

²⁰ [https://wwwcdn.imo.org/localresources/en/MediaCentre/HotTopics/Documents/COVID%20CL%204204%20adds/Circular%20Letter%20No.4204-Add.20%20-%20Coronavirus%20\(Covid-19\)%20-%20Accelerating%20Digitalization%20Of%20Maritime%20Trade.pdf](https://wwwcdn.imo.org/localresources/en/MediaCentre/HotTopics/Documents/COVID%20CL%204204%20adds/Circular%20Letter%20No.4204-Add.20%20-%20Coronavirus%20(Covid-19)%20-%20Accelerating%20Digitalization%20Of%20Maritime%20Trade.pdf).

G. ASYCUDA ASYHUB CASE STUDIES

The WTO TFA and the FAL Convention recognize the importance of automating and digitalizing customs and trade procedures – by focusing on issues such as eSW, port community systems, and overall interconnectivity and interoperability at national levels and across borders. This section provides examples of the practical implementation of these aspects based on experience from UNCTAD's ASYCUDA.

ASYCUDA is a computerized customs management system that covers most foreign trade procedures. It handles manifests and customs declarations, accounting procedures, and transit and suspense procedures. It also generates trade data that can be used for statistical analysis.

Many customs administrations have introduced procedures for submitting cargo information in advance, in line with the obligations of the WTO TFA. However, this is typically submitted only 24 hours before arrival, leaving customs administrations little time for risk assessment and processing – and potentially increasing turnaround times for traders, logistics operators and freight forwarders.

The information pertaining to a shipment is logged many weeks in advance but this data may not be accessible to all the organizational entities needed to grant customs clearances. ASYCUDA facilitates the sharing of this information in advance to enable customs to clear goods upon arrival, generally plan better, and reduce overall clearance times.

1. Digitizing Global Maritime Trade

To enhance further risk-based pre-arrival/pre-departure processing, the Digitizing Global Maritime Trade (DGMT) project²¹ focuses on enabling customs authorities to gain advance digital access to sea cargo information (PAP/PDP) – as stipulated in WTO TFA Articles 7.1 and 7.4.

Started by UNCTAD/ASYCUDA in December 2019 in partnership with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the shipping industry in the context of the German Trade Alliance for Trade Facilitation, the DGMT project aims at:

- Increasing efficiency in the international transport documentation process
- Reducing the time and costs of maritime trade for importers and exporters
- Streamlining risk management by increasing digital access by customs authorities to advance sea cargo information during clearance processes

Box 6.3 Components of the Digitizing Global Maritime Trade project

1. Development of ASYHUB Maritime, a standardized data exchange and data integration platform between ASYCUDAWorld and international standards-compliant shipping data platforms. The objective of component 1 is to harmonize and streamline information exchange between international standards-compliant data platforms and customs administrations. This allows for the efficient transfer of advanced cargo information and for existing data to be reused to complete the entry/exit customs formalities. The ASYHUB Maritime platform is now ready for piloting.
2. Enhance the capacity of customs authorities in Sri Lanka and Cambodia to apply ASYHUB Maritime to improve pre-arrival and pre-departure processing and risk management. This component aims to improve their risk management systems by using new datasets and new technology solutions. Customs authorities can then conduct risk assessments and process cargo and customs declarations prior to the arrival of goods at the port of entry/port of exit. This will enable the release of the cleared goods shortly after arrival.
3. Outreach to create demand and initiate upscaling to at least five further countries during or shortly after the successful conclusion of the first two pilots.

The two pilot countries will share their experiences with the network and receive advice and expertise from their peers. The five early adopter countries can take steps towards pre-arrival and pre-departure processing and risk management through ASYHUB Maritime and international standards-compliant shipping data providers.

Source: UNCTAD ASYCUDA.

²¹ Grant Agreement #81249048 between GIZ and UNCTAD/ASYCUDA signed in October 2019.

This project involves the development of ASYHUB Maritime, a standardized data exchange and integration platform. Currently, the project is in phase two of a three-phase process and is being testing in two pilot countries. This will be followed by the creation of a virtual community of practice consisting of countries using ASYCUDA World, to enable its potential replication or upscaling in over 90 countries.

2. ASYHUB and single window integration

ASYHUB Maritime is an open, standardized platform for data processing and data integration between ASYCUDAWorld and other external systems. The platform is designed to be cloud-native using micro service-centred principles. It will simplify and automate the submission of sea cargo manifest information through a system-to-system interface, providing customs authorities with richer information that can be used to make informed risk assessments and better decisions on which shipments to inspect. This will reduce the administrative burden for ship data providers, increase trade facilitation, ensure a quicker release of goods, and improve risk management, security, and revenue collection.

The ASYHUB Maritime platform enables ship data providers to re-use the existing data to complete the entry/exit formalities and exchange advanced electronic cargo information with port authorities, customs, and other border agencies (box 6.4). This will also ensure better interconnectivity and interoperability between countries.

Box 6.4 Customs formalities concerning entry or exit

- Entry of goods
- Customs Cargo Manifest (at arrival)
- Arrival notification
- Presentation notification
- Temporary Storage Declaration
- Exit of goods
- Customs Cargo Manifest (at departure)
- Exit notification.

Source: UNCTAD ASYCUDA.

H. SUMMARY AND POLICY CONSIDERATIONS

Ensuring maritime cybersecurity

The maritime sector is increasingly structured around online and automated systems. Recently updated industry guidelines offer shipowners and operators information on procedures and actions to maintain cybersecurity in their companies and ships – adopting cyber-risk management approaches that take account of IMO requirements and other relevant guidelines. Implementing cybersecurity not only helps shipowners avoid having their ships detained by port State control authorities, it also makes economic sense, and helps protect shipping assets and technology from increasing cyber-threats.

Regulating maritime autonomous surface ships

The industry is advancing rapidly with the technology for maritime autonomous surface ships (MASS) and is now conducting trials. In May 2021, the IMO Maritime Safety Committee completed a regulatory scoping exercise which highlighted high-priority issues that cut across several instruments and will need policy decisions to determine future work. This could result in a MASS instrument or code, with goals, functional requirements and corresponding regulations. Developing countries representatives and other stakeholders are encouraged to contribute to future discussions.

Reducing greenhouse gas emissions and adapting to climate change

Mitigation and adaptation to global climate change are increasingly urgent imperatives. Resilience-building is especially important for seaports that are exposed to sea-level rise and related extreme weather events. The 2021 IPCC report warns of increasingly extreme heatwaves, droughts, and flooding. Nevertheless,

rising temperatures could be stabilized by deep cuts in emissions of GHGs in which shipping must play its part. In June 2021, the IMO adopted mandatory regulations that aim to cut the carbon intensity of ships and their carbon emissions. These include requirements to measure the energy efficiency of all ships and set the required attainment values. Adaptation remains a particular concern for vulnerable developing countries, including SIDS.

Reducing pollution from shipping

In 2020 the IMO set a 0.5 per cent sulphur limit on ship fuel oils. Flag and Port State controls need to make sure ships are compliant. During 2020 and the first half of 2021, implementation was relatively smooth with VLSFO as the preferred solution, and compliant fuel oil was widely available globally. Another major fuel oil concern is the risk of oil spills which can have devastating consequences for ecosystems and biodiversity and for the economies and tourist industries of coastal countries, which should be able to claim adequate compensation. Unfortunately, the very comprehensive international regime on liability and compensation for tanker oil spills (CLC-IOPC Fund regime), does not apply to bunker oil spills from other types of ship. Given the continuing growth in the size of vessels of any type and the associated potential for significant bunker oil pollution, with devastating consequences for vulnerable coastal developing countries and SIDS, the issue of liability for bunker oil spills from ships other than tankers may need to be revisited. The IMO is developing a claims manual for the Bunker Oil Pollution Convention, 2001 which addresses liability for bunker oil spills.

Commercial law implications of the pandemic, and the use of electronic trade documents

The COVID-19 pandemic continues to interfere with international trade, creating inefficiencies, delays and supply-chain disruptions on an unprecedented scale. This also has implications for contractual performance with potential legal consequences and litigation involving complex international jurisdictional issues. Resolving these problems will require collective and coordinated action by governments and industry. This could involve, for example agreeing contract extensions, showing restraint in pursuing rights and legal claims, and resolving disputes through mediation and informal mechanisms. It could also involve commercial risk allocation through standard clauses to address contractual rights and obligations in the light of the circumstances associated with the pandemic. Recent UNCTAD reports provide analytical guidance to commercial parties and governments on some of the key legal issues arising.

Digitalizing trade facilitation

Maritime transport can be impeded by regulatory requirements and slow clearance procedures at ports. Trade facilitation can, however, be improved by digitalization and automation of customs and other compliance processes, single window implementation, ensuring that formalities are increasingly paperless. Frameworks and common standards and regulations for these systems can be based on multilateral agreements, e.g., through the WTO TFA and the IMO FAL Convention.

Connectivity requires cooperation and coordination

New technologies and smart solutions raise questions of interconnectivity and interoperability and the need for international standards. When digitalizing and automating their systems, developing and least developed countries can take advantage of the experiences of other countries and follow good practices already available, such as those of the ASYCUDA system.

National trade facilitation committees

Any successful trade reform relies on cooperation between public administrations and the business community. For this purpose, each country should set up an NTFC comprising public and private stakeholders at national levels who should devise a coherent and coordinated strategy and champion and drive the trade facilitation agenda. The NTFC membership should represent all the businesses involved in maritime trade and port operations who can work with the government authorities to make logistics supply chains more efficient and boost national trade performance.

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