



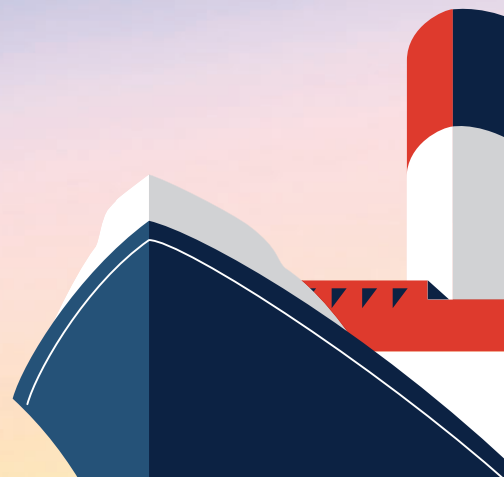
REVIEW OF MARITIME TRANSPORT

2021

OVERVIEW



UNITED NATIONS



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OVERVIEW

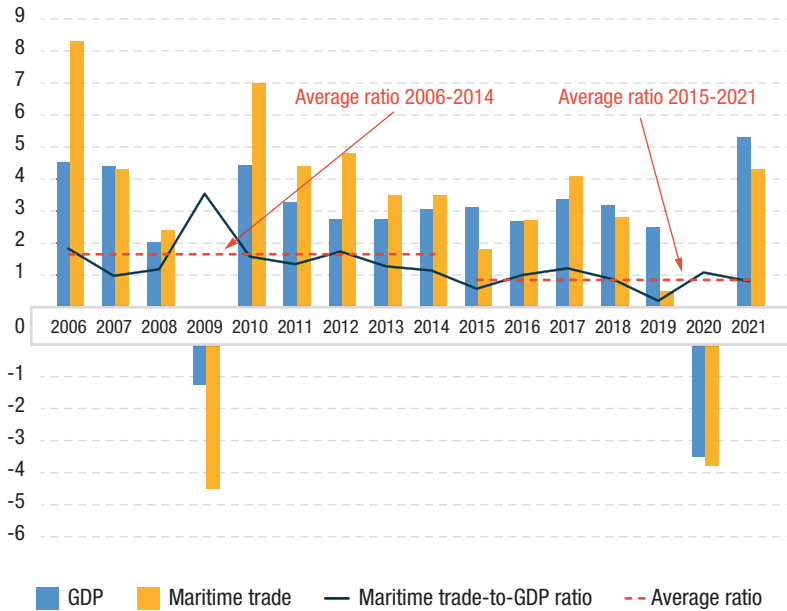
Maritime transport defied the COVID-19 disruption. In 2020, volumes fell less dramatically than expected and by the end of the year had rebounded, laying the foundations for a transformation in global supply chains and new maritime trade patterns

The COVID-19 pandemic disrupted maritime transport, though the outcome was less damaging than initially feared. The shock in the first half of 2020 caused maritime trade to contract by 3.8 per cent in the year 2020. But in the second half of the year there was a nascent, if asymmetric, recovery, and by the third quarter, volumes had returned, for both containerized trade and dry bulk commodities. However, there has yet to be a full recovery for tanker shipping.

Maritime trade has performed better than expected partly because the COVID-19 pandemic unfolded in phases and at different speeds, with diverging paths across regions and markets. The rebound in trade flows was also the result of large stimulus packages, and increased consumer spending on goods, with a growth in e-commerce, especially in the United States. Later, there was more general optimism in advanced regions from the rollout of vaccines. But it was also partly due to unlocking pent-up demand for cars, for example, and to restocking and inventory-building. The rebound was fairly swift because, unlike the global financial crisis of 2009, the downturn was not synchronized across the world.

In 2021, in tandem with the recovery in merchandise trade and world output, maritime trade is projected to increase by 4.3 per cent (figure 1). The medium-term outlook also remains positive, though subject to mounting risks and uncertainties, and moderated in line with projected lower growth in the world economy. Over the past two decades, compound annual growth in maritime trade has been 2.9 per cent, but over the period 2022–2026, UNCTAD expects that rate to slow to 2.4 per cent.

Figure 1 International maritime trade and world gross domestic product (GDP) and maritime trade-to-GDP ratio, 2006 to 2021 (percentage annual change and ratio)



Source: UNCTAD calculations, based on the *Review of Maritime Transport*, various issues, data from UNCTADstat and table 1.1 of the *UNCTAD Trade and Development Report 2021. From recovery to resilience: The development dimension*.

Maritime transport navigated through the pandemic, but there was an unprecedented humanitarian crisis for seafarers

While carriers generally managed to mitigate the shock and disruption, port and landside operations found it more difficult to adjust, and seafarers were in a precarious situation as the pandemic triggered an unprecedented global crew-change crisis. The health risks and related travel restrictions meant that hundreds of thousands of seafarers could not return home, while an equivalent number were unable to join their ships and to provide for their families.

Hardest hit has been tanker shipping, but the impact has been less for containerized trade, gas shipments, and dry bulk commodities

Lockdowns, travel restrictions and production cuts have compressed the demand for fuel. In 2020, shipments of crude oil, refined petroleum products, and gas together fell by 7.7 per cent. The impact was less, however, for dry bulk commodity trade: supported by strong demand from China for iron ore and grain, total dry bulk trade fell by only 1.5 per cent. Containerized trade also resisted, falling by only 1.1 per cent. Global container port throughput fell at a similar rate – and in 2020 totalled 815.6 million twenty-foot equivalent units (TEU).

Logistical bottlenecks, and soaring costs, along with an asymmetric recovery, have heightened uncertainty

Maritime trade weathered the storm in 2020 and the short-term outlook remains positive. However, the emerging multi-paced recovery is inherently fragile as many countries and regions continue to lag. In addition to new pandemic risks and the dangers of a two-track vaccination pattern where developing countries continue to fall behind, other risks are casting a shadow on the recovery. While not all countries have been able to deploy large stimuli packages and support measures, an untimely ending of the existing support measures in advanced economies could potentially stifle growth and hinder the nascent recovery. The pandemic's impacts and legacies are likely to linger and the future shape and contours of the next normal for the world economy remain uncertain.

The nascent recovery has also been hindered by supply-chain bottlenecks. The rebound in trade, combined with pandemic-induced restrictions in logistics operations has led to shortages in equipment and containers, along with less reliable services, congested ports and longer delays and dwell times. For shipping, on the other hand, soaring freight rates, surcharges and fees have bolstered profitability.

Freight rates increased further following the March 2021 closure of the Suez Canal. The grounding of the 20,150-TEU container ship Ever Given blocked the canal, delaying ships heading for Europe, and increasing the constraints on ship and port capacity. Some voyages had to be re-routed around the Cape, adding up to 7,000 miles to the distance.

Whether the recovery lasts will depend critically on the path of the pandemic. Fresh waves of infection, combined with low vaccination rates, especially in developing countries, have led to new lockdowns and border closures. A broad-based recovery hinges to a large extent on a worldwide vaccine rollout. The International Monetary Fund estimates that \$50 billion are required to end the pandemic and roll out vaccines across developing countries. This would bring not just health but also economic benefits since it would be tantamount to a large scale economic stimulus package that could accelerate economic recovery and by 2025 generate some \$9 trillion in additional global output.

Seafarers are increasingly being recognized as “key workers” who are keeping shipping and trade moving, while also being at the front line of the health crisis. Since seafarers come predominantly from developing regions, industry and government should move quickly to implement vaccine procurement and distribution plans.

The longer-term outlook is being reshaped by structural megatrends that transcend the pandemic and its immediate impact

Eventually, the logistical hurdles caused by large swings in demand could dissipate as global trade patterns normalize. However, the pandemic has also accelerated megatrends that in the longer-term could transform the maritime transport landscape.

By exposing the vulnerabilities of existing supply chains, the COVID-19 disruption has sharpened the need to build resilience. COVID-19 emphasized the importance of ensuring continuity in supply chains and the need for them to become more resilient, responsive, and agile.

Discussions over the future of globalization have ushered calls to take a fresher look at the configuration of the extended supply chains to reduce heavy reliance on distant suppliers. Some are arguing that reshoring and nearshoring will accelerate, resulting in deep reconfiguration of supply chains. While the structural trends that had emerged over a decade ago and accelerated during recent trade tensions are likely to result in changes to globalization patterns and features, an outright end to globalization *per se* is unlikely.

It may be fairly straightforward to reshore labour-intensive and low-value production, but it is more complex to move production and

switch suppliers for mid-and high-value-added manufacturing. Instead, enterprises are likely to blend local and global sourcing, modifying their strategies according to product and geography – with a blend of reshoring, diversification, replication, and regionalization. Nevertheless, for the near future China is likely to remain a leading manufacturing site. Automation could make reshoring and nearshoring more economically viable in the longer term. Hybrid operating models involving just-in-time (i.e., material moved just before its use in the manufacturing process) and just-in-case (i.e., where companies keep large inventories to minimize stocks being sold out) supply chain models are likely to emerge. Combined, these trends will change distances and routes, increasing the need for more flexible shipping services. They also entail implications for vessel types and sizes, ports of call, and distance travelled.

The pandemic has accelerated pre-existing digitalisation and environmental sustainability trends. Technological advances have enabled shipping and ports to continue operations while minimizing interaction and physical contact. New technologies have also stimulated the rise of online commerce which has transformed consumer shopping habits and spending patterns. The growth in online trade has increased the demand for distribution facilities and warehousing that are digitally enabled and offer value-added services. All these developments are expected to generate new business opportunities for shipping and ports as well as for other players in the maritime supply chain.

Technology will also be critical for advancing environmental sustainability. While designing their stimulus packages and post-pandemic plans, many governments aim to harness the synergies between technology, environmental protection, efficiency, and resilience. Businesses and governments recognize that adapting to the post-pandemic world and building back better requires adding economic, social and environmental value and creating new business opportunities, not least for maritime transport.

Supply not keeping pace with demand

In 2020, the global commercial shipping fleet grew by 3 per cent, reaching 99,800 ships of 100 gross tons and above. By January 2021, capacity was equivalent to 2,13 billion dead weight tons (dwt) (table 1). During 2020, delivery of ships declined by 12 per cent, partly due to lockdown-induced labour shortages that disrupted marine-industrial activity.

The ships delivered were mostly bulk carriers, followed by oil tankers and container ships. As owners and operators tried to cope with tight vessel supply, they were also buying more second-hand ships with a resulting increase in prices. Recycling rates also increased in 2020, although compared to previous years, the levels remain low.

During 2020, orders for new ships had declined by 16 per cent, continuing a downward trend observed in previous years. In early 2021, however, shipping companies reacted to the capacity constraints with a surge of new orders, especially for container ships for which orders were the highest for the last two decades. There were also more orders for LNG carriers.

Principal types	2020	2021	Percentage change 2021 over 2020
Bulk carriers	879 725 42.47%	913 032 42.77%	3.79%
Oil tankers	601 342 29.03%	619 148 29.00%	2.96%
Container ships	274 973 13.27%	281 784 13.20%	2.48%
Other types of ships:	238 705 11.52%	243 922 11.43%	2.19%
<i>Offshore supply</i>	84 049 4.06%	84 094 3.94%	0.05%
<i>Gas carriers</i>	73 685 3.56%	77 455 3.63%	5.12%
<i>Chemical tankers</i>	47 480 2.29%	48 858 2.29%	2.90%
<i>Other/not available</i>	25 500 1.23%	25 407 1.19%	-0.36%
<i>Ferries and passenger ships</i>	7 992 0.39%	8 109 0.38%	1.46%
General cargo ships	76 893 3.71%	76 754 3.60%	-0.18%
World total	2 071 638	2 134 640	3.04%

Source: UNCTAD calculations, based on data from Clarksons Research.

Note: Propelled seagoing merchant vessels of 100 tons and above; beginning-of-year figures.

During the second half of 2020, and into 2021, world trade gradually recovered but supply was less elastic and constrained by COVID-19 related delays and congestion – leading to a significant increase in container freight rates.

The future demand/supply balance will also be impacted by regulatory requirements to align shipping operations with decarbonization targets. Introduced under the auspices of the International Maritime Organization (IMO), these new regulations will require replacing some of the existing fleet so will entail significant costs. As well as creating a degree of uncertainty, this could reduce the capital available to expand the fleet to cater for trade growth.

Cost pressure and soaring rates and surcharges would weigh on smaller players and prices

Since the second half of 2020 there has been an increase in freight rates. While demand for containerized goods has been higher than expected, shipping capacity has been constrained by logistical hurdles and bottlenecks and shortages in container shipping equipment. Unreliable schedules, and port congestion have also led to a surge in surcharges and fees, including demurrage and detention fees.

These soaring costs are a challenge for all traders and supply chain managers, but especially for smaller shippers who, compared with the larger players, may be less able to absorb the additional expense and are at a disadvantage when negotiating rates and booking space on ships. Smaller shippers and low-value paying cargo may thus find it difficult to secure service contracts and could see their margins eroded.

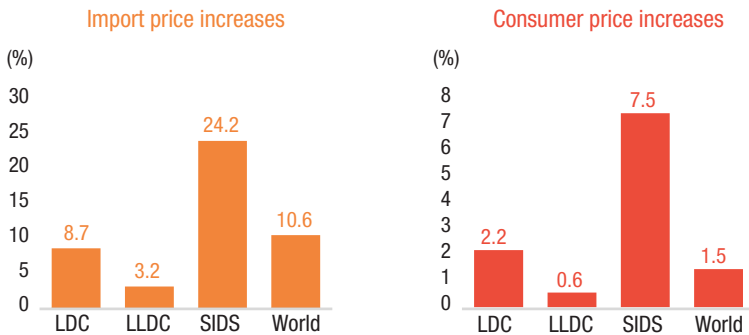
Freight rates are expected to remain high. Demand is strong and there is growing uncertainty on the supply side, with concerns about the efficiency of transport systems and port operations. In the face of these cost pressures and lasting market disruption, it is increasingly important to monitor market behaviour and ensure transparency when it comes to setting rates, fees, and surcharges. There have been calls for governments to intervene, and for regulators to apply closer oversight and address unfair market practices.

If sustained, the current surge in container freight rates, will significantly increase both import and consumer prices. UNCTAD's simulation model suggests that global import price levels will increase on average by 11 per cent as a result of the freight rate increases (figure 2). Hardest hit will be

the small island developing states (SIDS) who depend for their merchandise imports primarily on maritime transport and who are simulated to face a cumulative increase of 24 per cent with a time lag of about a year.

Higher container freight rates will also have a sizeable impact on consumer prices. If container freight rates remain at their current high levels, then in 2023 global consumer prices are projected to be 1.5 per cent higher than they would have been without the freight rate surge. The impact is expected to be more significant for smaller economies that depend heavily on imported goods for much of their consumption needs. In SIDS, the cumulative increase in consumer prices is expected to be 7.5 per cent and in the Least Developed Countries (LDCs) 2.2 per cent.

Figure 2 Simulated impact of current container freight rate surge on import and consumer price levels



Sources: Based on data provided by Clarksons Research, *Shipping Intelligence Network*, the International Monetary Fund, *International Financial Statistics* and *Direction of Trade Statistics*, UNCTADstat, and the World Bank, *World Integrated Trade Solution* and *Commodity Price Data (The Pink Sheet)*.

Note: The impact of the container freight rate surges on prices is assessed based on a 243 per cent increase in the China Containerized Freight Composite Index between August 2020 and August 2021. The simulation model assumes that freight rates in August 2021 will be sustained over the remaining simulation period (September 2021 to December 2023) and all other factors are held constant over the entire simulation period (August 2020 to December 2023).

Some goods will be affected more than others by the surge in container freight rates. Most exposed are goods manufactured through integrated supply chains. Globalized production processes entail a greater use of shipping, with intermediate goods often crossing borders multiple times

within and between regions. This is the case, for example, for East Asian goods destined for major markets in North America and Europe. For computers, and electronic and optical products, for example, the consumer price uplift induced by the current freight rate surge could be 11 per cent.

Higher shipping costs will also affect some low-value-added products: for furniture, for example, and textiles, garments and leather products, the consumer price uplifts could be ten per cent. These increases could erode the competitive advantages of smaller economies that produce many of these goods. At the same time, these countries will find it more difficult to import the high-technology machinery and industrial materials they need to move up the value chain, diversify their economies and achieve the Sustainable Development Goals (SDGs).

Even in major economies, lingering high container freight rates and disruption in maritime transport in the short- to medium-term threaten to undermine recovery. UNCTAD's analysis concludes that in the United States and the euro area, for example, a 10 per cent increase in container freight rates could lead to a cumulative contraction in industrial production of around 1 per cent.

Structural factors keep maritime transport costs higher in developing regions

The current historical highs in freight rates are largely driven by pandemic-induced shocks and unexpected upward swings in shipping demand. But in the longer term, shipping and port prices are driven by structural factors such as port infrastructure, economies of scale, trade imbalances, trade facilitation, and shipping connectivity – all of which have lasting impacts on maritime transport costs and trade competitiveness. An analysis based on a new UNCTAD-World Bank transport costs dataset, shows that significant structural improvements could reduce maritime transport costs by around four per cent. Interventions and policies that address the structural determinants of maritime transport costs can thus help mitigate the impacts from cyclical factors and disruptions.

Other structural issues that will increase prices include the new regulations on decarbonizing shipping. The recently adopted IMO short-term measure on greenhouse gas reduction is expected to reduce average shipping speeds and increase maritime transport costs, especially for developing countries, and in particular the SIDS.

COVID-19 slows operations for ships and ports

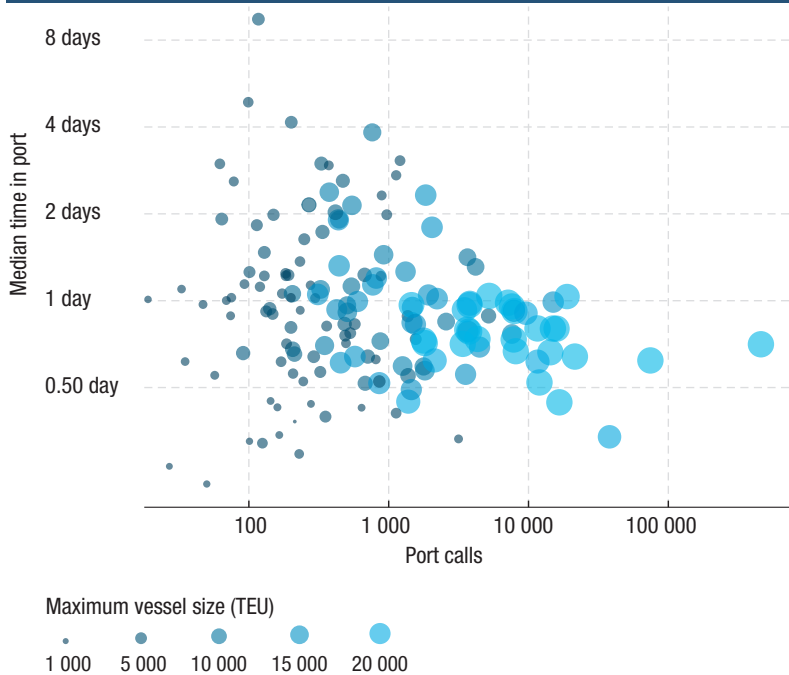
In the first half of 2020, reflecting the slump in shipping demand, cargo-carrying ships made fewer port calls. The number of calls subsequently increased, particularly in Europe, East Asia, and South-Eastern Asia, albeit not yet to pre-pandemic levels.

In 2020, terminal operators, authorities, and intermodal transport providers took measures to contain COVID-19 and, as a result, ships had to spend more time in ports that were operating more slowly. The greatest delays were for dry break bulk carriers for which cargo operations tend to be less automated and more labour-intensive so were slowed by measures to reduce social contact.

Turnaround times can differ significantly between countries (figure 3). One group of countries with faster turnarounds comprises those with fewer arrivals and only small ships and with only few containers loaded and unloaded during each port call. These include Dominica, Saint Kitts and Nevis, and Saint Vincent and the Grenadines. Another group with fast turnarounds comprises those that have the latest port technologies and infrastructure and can accommodate the largest container vessels; they benefit from economies of scale and thus tend to attract the highest number of port calls. These include Japan, Hong Kong China, and Taiwan Province of China. Efficient ports initiate a positive feed-back loop: high efficiency makes their ports attractive as ports of call, further boosting the number of arrivals. Countries in the middle of the distribution report a wide range of median port waiting times, reflecting differences in efficiency and other variables such as vessel age and cargo throughput.

Shipping and port performance is generally lower in developing countries. They have higher transport costs and lower connectivity because they are often further away from their overseas markets and are hampered by diseconomies of scale and lower levels of digitalization.

Figure 3 Median time in port, number of port calls, and maximum vessel sizes, by country, container ships, 2020



Source: UNCTAD, based on data provided by MarineTraffic. Both axes in logarithmic scale.

Note: Ships of 1,000 GT and above. For the complete table of countries, see <http://stats.unctad.org/maritime>.

Positive trends in port governance and gender participation

Each year, UNCTAD uses data from its TrainForTrade Port Management Programme to benchmark countries against each other using the Port Performance Scorecard (PPS). Many other port performance projects focus on service provision such as cargo handling, but the PPS, which uses data for 26 indicators, enables comparisons between entire port entities, providing data that is valuable for strategic planning within ports and for evidence-based policy analysis at regional and state levels.

Member ports' annual throughput in 2020 ranged from 1.5 million to 80.9 million tonnes. Around half of were in the smallest category, less than 5 million tonnes, and the medium category, 5 million to 10 million tonnes, a range of volumes that was similar across all regions.

Since 2015, one of the six main categories in the PPS scorecard has been the rate of female participation in the port workforce. In 2019 and 2020, this remained low, at around 18 per cent. The rate was significantly higher in Europe at 25 per cent, though even here roles are not equally distributed between men and women. Women tend to be better represented in management and administrative roles, for which between 2019 and 2020 the proportion of women increased from 38 to 42 per cent. In this case, Asian members were above average at 52 per cent compared with those in Europe at 39 per cent. Women are far less likely to be working in cargo handling port operations. These results highlight the need for strategic policy interventions to deliver on Sustainable Development Goal 5 to “Achieve gender equality and empower all women and girls.”

Port and shipping performance depend on trade and transport facilitation

Efficient maritime transport depends on effective trade and transport facilitation that reduces the time and cost of customs and other trade procedures and integrate new technologies for administrative formalities. Boosts the performance of the entire supply chain with positive effects on maritime transport.

The need for cross-border trade facilitation was highlighted by the COVID-19 pandemic, particularly for trade in medical equipment, drugs and emergency goods such as vaccines and personal protection equipment (PPE) – which could be held up at ports by red tape or by slow clearance procedures to comply with regulatory requirements.

In recent years, the introduction of new technology in administrative processes has boosted efficiency along the logistics supply chain. This has involved digitalization and automation of customs processes, paperless formalities, and the introduction of single-window services – the impetus for which was boosted during the COVID-19 pandemic.

An example of the use of ICT, is UNCTAD's Automated System for Customs Data (ASYCUDA) which involves automation and digitalization in supply chains. A recent development, the ASYHUB solution, smooths data

transfer between ports of departure and arrival – using risk management concepts to help speed up clearance procedures and avoid goods being stuck in ports unnecessarily.

Another ICT innovation based on UNCTAD technology is the Trade Information Portal (TIP) – a website in each country that provides traders with easy access to information about trade regulations and procedures. The UNCTAD TIP offers importers and exporters online, step-by-step guides to trade-related procedures and also helps the country fulfill its obligations arising from the World Trade Organization Trade Facilitation Agreement. 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.

Digitalization allows a paperless environment whereby trade procedures are all carried out online. For the traders this reduces time and cost and increases transparency and market access, while also reducing physical contact and the risks of contagion. In addition, smart digital solutions improve public administration of trade and boost efficiency in export, import and transit operations. Moreover, by minimizing the use of paper, trade facilitation can also help mitigate climate change.

Reforms in trade facilitation have been promoted by the multilateral trading system, particularly through the WTO Facilitation Agreement and the IMO Convention on Facilitation of International Maritime Traffic. These agreements provide common standards and regulations that have proved especially valuable during the COVID-19 pandemic. By providing governments with guidance and incentives for reforming trade facilitation, they have paved the way for further digitalization and enhanced transparency, and for rationalizing administrative formalities. These developments also promote robust public-private partnerships (PPPs), such as the National Trade Facilitation Committees and Port Community Systems that involve the business community in port operations. Efficient maritime trade and transport will depend on aligning and streamlining the mandates and work of the various PPPs.

A continuing crisis for seafarers stranded at sea

Globally there are around 1.9 million seafarers working to facilitate the way we live. The BIMCO/ICS Seafarer Workforce Report 2021 estimated the global supply of seafarers at 1,892,720, up from 1,647,494 in 2015. Of these, 857,540 were officers, and 1,035,180 were ratings – the skilled seafarers who carry out support work. The five largest seafarer-supplying countries were the Philippines, the Russian Federation, Indonesia, China, and India, representing 44 per cent of the global workforce (table 2).

	All Seafarers	Officers	Ratings
1	Philippines	Philippines	Philippines
2	Russian Federation	Russian Federation	Russian Federation
3	Indonesia	China	Indonesia
4	China	India	China
5	India	Indonesia	India

Source: ISF and BIMCO, Seafarer Workforce Report 2021, London, 2021.

For the supplying countries seafarers are important sources of income. In 2019, the Philippines, for example, earned \$30.1 billion from its overseas workers – 9.3 per cent of GDP and 7.3 per cent of gross national income (GNI) – of which \$6.5 billion came from its seafarers. In 2020 total remittances fell 0.8 per cent to \$29.9 billion, with those from seafarers falling 2.8 per cent to \$6.4 billion.

During the COVID-19 pandemic, seafarers continued to demonstrate great professionalism and dedication, supporting the delivery of food, medical supplies, fuel, and other essential goods, and helping keep supply chains active and global commerce running.

However, hundreds of thousands of seafarers remain stranded at sea. Each month, crews need to be changed over – to prevent fatigue and comply with international maritime regulations for safety, health and welfare. Responding to COVID-19, governments closed many borders and imposed lockdowns and prohibited people from disembarking thus temporarily suspending crew changes. As a consequence, large numbers of seafarers have been unable to be replaced or repatriated after long tours of duty and had to extend their service on board. Even over a year into the pandemic, due to these restrictions, and the shortage of international flights, according to latest estimates by the International

Chamber of Shipping, around 250,000 seafarers remain stranded, far beyond the expiration of their contracts. Yet, there is still no global consensus on uniform measures to allow for efficient crew changes and transfer.

During the pandemic, stakeholders, including international bodies, governments, and industry, have issued recommendations and guidance – aiming to ensure that seafarers are healthy and protected from COVID-19, have access to medical care, and are recognized as key workers and are vaccinated as a matter of priority, and also that ships and port facilities meet international sanitary requirements. Nevertheless, as the pandemic continues for a second year, seafarers remain very vulnerable.

With some notable exceptions, only a small proportion of the world's seafarers have been vaccinated. Belgium has demonstrated best practice, and July 2021 started a vaccination campaign for all seafarers arriving in a Belgian port, regardless of nationality.

To address seafarers' issues there has been a continuous level of cooperation among international organizations and industry bodies, including IMO, ILO, WHO, UNCTAD, ICS, and ITF, which have repeatedly expressed concern about the humanitarian crisis in the maritime shipping sector and urged Member States to designate seafarers and other marine personnel as key workers, accept seafarers' identity documents as evidence of their key worker status, and allow flexibility for ship owners and managers to divert ships to ports where crew change is possible without imposing penalties.

On 1 December 2020, the UN General Assembly unanimously adopted a resolution: International cooperation to address challenges faced by seafarers as a result of the COVID-19 pandemic to support global supply chains (A/RES/75/17). This urges Member States to designate seafarers and other marine personnel as key workers and encourages governments and other stakeholders to implement the "Industry Recommended Framework of Protocols for ensuring safe ship crew changes and travel during the Coronavirus (COVID-19) pandemic". It also calls upon governments to facilitate maritime crew changes – for example, by enabling them to embark and disembark, expediting travel and repatriation efforts, and ensuring access to medical care. The resolution also requests IMO, ILO and UNCTAD to inform the General Assembly at its 76th session on issues related to the resolution.

This follows earlier resolutions from other bodies. On 21 September 2020 the IMO's Maritime Safety Committee recommended action to facilitate ship crew change, access to medical care, and seafarer travel during the COVID-19 pandemic. According to IMO, as of the end of June 2021, 60 Member States and two Associate Members had signed on to designate seafarers as key workers. Similarly, on 8 December 2020 the Governing Body of the ILO, adopted the "Resolution concerning maritime labour issues and the COVID-19 pandemic".

In January 2021, the shipping industry issued the Neptune Declaration on Seafarer Wellbeing and Crew Change, which by June 2021 had been signed by more than 600 companies and organizations. They have also produced a Neptune Declaration Crew Change indicator which aggregates data from 10 leading ship managers which collectively have about 90,000 seafarers currently on board. This reported that between June and July 2021 the situation appeared to be worsening, with more seafarers on vessels beyond the expiry of their contract and more who had been on board for over 11 months – the maximum length of time envisaged in the 2006 Maritime Labour Convention (MLC). Since the launch of the indicator in May 2021, the proportion of seafarers on vessels beyond the expiry of their contract had risen from 5.8 to 8.8 per cent while the proportion on board for over 11 months had increased from 0.4 to 1.0 per cent.

Advances in international law and technology

The COVID-19 pandemic has interfered with international trade, creating inefficiencies, delays and supply-chain disruptions on an unprecedented scale – which also have legal consequences if contractual performance is disrupted, delayed, or becomes impossible. For shipping this can lead to litigation that raises complex international jurisdictional issues. Government and industry will need to work together to address the related contractual rights and obligations, and arrive at standard contractual clauses for commercial risk-allocation.

Many of the problems are associated with delays in documentation – which should encourage more commercial parties to adopt secure electronic solutions. Updated industry guidelines adopted recently, offer useful guidance to shipowners and operators on procedures and actions to maintain the security of IT systems in their companies and onboard

ships, adopting a cyber-risk management approach, and taking account of the IMO requirements, and other relevant guidelines.

Technological innovation is also raising the prospect of automated crewless vessels. The industry is conducting trials on “maritime autonomous surface ships” (MASS). The aim is to ensure safe, secure and environmentally sustainable shipping with the relevant legal framework. In May 2021, the IMO Maritime Safety Committee completed a regulatory scoping exercise for the use of MASS which highlighted some priority issues. The outcome could be a MASS instrument/code, with goals, functional requirements and corresponding regulations, suitable for different degrees of autonomy.

On the path to a 3°C temperature rise

The shipping industry has an important part to play in combatting climate change. The Paris Agreement aimed to reduce global warming to well below 2°C and pursue 1.5°C. But, despite a brief dip in carbon dioxide emissions caused by the COVID-19 pandemic, the world is still heading for a temperature rise in excess of 3°C this century. Urgent action is needed on both mitigation and adaptation.

At the regulatory level, the shipping industry is addressing climate issues through the 1973/1978 International Convention for the Prevention of Pollution from Ships (MARPOL). In June 2021, the IMO adopted amendments to Annex VI of the Convention, which introduced new mandatory regulations to further reduce greenhouse gas emissions from shipping, and require owners to set energy efficiency targets. There were also initial discussions on the mid- and long-term action needed, including market-based measures, along with an industry-led proposal for an International Maritime Research and Development Board a non-governmental body which would be financed by a levy on marine fuel and would support research, development, and the deployment of zero-carbon technologies.

Climate change, with the prospect of accelerating sea-level rise and more extreme weather events, will also have major implications for the world's seaports. Securing global maritime transport and trade will therefore mean investing in adaptation and building resilience- for seaports and other key transport infrastructure especially in developing countries.

Broad-based global recovery will depend on smart, resilient and sustainable maritime transport

The COVID-19 pandemic triggered a succession of shocks and waves, each setting off their own spinoff events. The extent and impact of disruption varied considerably, however, between regions, economic sectors, and segments of the shipping market. The recovery is similarly proving uneven, with differences in the levels and scale of policy support and unequal access to vaccines.

Although the initial impact on maritime transport was less dramatic than predicted, the outlook is shadier. The timescale for a lasting recovery will depend on the progress of the pandemic, the extent and timing of world vaccination plans, and the duration of policy support measures. At present the nascent recovery is being threatened by supply-chain breaks and logistical bottlenecks that are disrupting shipping markets and pushing cost levels to historic highs.

The COVID-19 disruption has also accelerated pre-existing megatrends – geopolitical, technological, and environmental. These trends have been unfolding slowly over the past decade but have accelerated during the pandemic and continue to transform maritime transport and trade:

Geopolitics – The COVID-19 health crisis underscored the extent to which nations are economically and socially interdependent – integrated through global supply chains and their underlying extended maritime transport networks. In the face of heightened geopolitical risks and rising trade tensions, many countries and enterprises are shifting their mindsets and now perceive global interdependency partly as a vulnerability. To mitigate risks and build resilience – they are therefore aiming to reduce their reliance on distant foreign suppliers.

Resilience – The COVID-19 disruption has tested supply chains and their underlying business models, and put transport and logistics networks under strain. Enterprises and governments are aiming to make supply chains more robust and resilient, including by looking to diversify their business partners and suppliers. This will involve a new balance between local, regional and global production. They are also reconsidering inventory and stock management strategies and the trade-offs between just-in-time and just-in-case supply chain models.

Technology – Customs officials, port workers, and transport operators increasingly recognize the value of new technologies and digitalization, not just as a way of boosting efficiency but also for maintaining business continuity at times of disruption. Technological innovations include advanced analytics, on-

board sensors, communications technology, port-call optimization, blockchains, big data, and autonomous ships and vehicles. During the pandemic, these technologies have helped reduce physical contact, and keep ships moving, ports open and cross-border trade flowing. Technological advances have also stimulated consumer spending online and a growth in e-commerce. These trends will continue to redefine production and consumption patterns and the ways in which ships, ports and their hinterland connections deliver cargo and services.

Shipping market dynamics – In anticipation of future disruptions, carriers, shippers, ports, and inland transport operators will be rethinking their business and operating models to respond more flexibly to changing market conditions. Having seen the way in which the trade rebound stumbled against logistical bottlenecks and constrained capacity following the COVID-19 shock, they are likely to reconsider their levels of investment in shipping and ports as well as their planning operations. They can also anticipate potential greater regulation of shipping markets as national competition authorities step up their monitoring of freight rates and market behaviour and scrutinize rapid movements in shipping prices.

Decarbonization and the energy transition – Maritime transport is facing growing pressure to decarbonize and operate in a more sustainable way – issues that have also come to the fore as part of the post-pandemic recovery. With ongoing IMO work on greenhouse gas emission reduction in shipping providing further momentum, shipping is expected to change its fuel mix and use new technology and ship designs, alternative fuels and operational adjustments to cut its carbon and environmental footprint. For energy, shipping is not just a large-scale user but also a major carrier, so the industry will have to respond to lower demand for oil tankers and coal carriers and more for ships transporting hydrogen, ammonia and other alternative fuels.

Climate adaptation and resilience – Maritime transport infrastructure and services came under severe stress as a result of the pandemic and the closure of the Suez Canal. This was in addition to the ongoing dangers of climate change: over recent years extreme weather events, including floods, hurricanes and cyclones, have been causing frequent and intense disruptions for both coastal infrastructure and hinterland connections. With current climate projections pointing to a global warming trajectory exceeding the agreed targets under the Paris Agreement, the maritime industry and governments need to invest in adaptation and in climate-proofing maritime transport infrastructure and services, as well as accelerate the development of related legal, policy and technical measures, and capacity-building.

Priorities for action

- 1. Vaccinate the world** – To complete broad-based global vaccination, developing countries should have fair access to vaccines. Investing in global vaccination, with the support of dedicated funds, will not just accelerate the end of the pandemic but also stimulate the recovery and add trillions to global economic output.
- 2. Revitalize the multilateral trade system** – Decades of trade liberalization and multilateral action have brought economic and social benefits that are now under threat from increasing trade restrictions and protectionism. To retain these hard-won gains countries will need to defend and consolidate the multilateral trade system and minimize trade restrictiveness.
- 3. End the crew-change crisis** – This requires urgent attention from flag, port and labour-supplying states, in collaboration with relevant international organizations. All states should be parties to the relevant international legal instruments, including the MLC 2006, ILO Conventions Nos. 108 and 185 on Seafarers' Identity Documents, and the IMO FAL Convention. To advance the objectives of SDG 8, and to ensure decent work for seafarers, states also need to redouble their efforts to ensure that these conventions and labour standards are fully implemented.
- 4. Vaccinate seafarers** – Concerted collaborative efforts by industry, governments and international organizations should ensure that seafarers are designated as key workers and are vaccinated as a matter of priority.
- 5. Facilitate crew changes** – Governments and industry should continue to work together, including through the Neptune Declaration initiative, and in collaboration with relevant international organizations, facilitate crew changes, in accordance with international standards and in line with public health considerations. They should also ensure the availability and access to related seafarer data.
- 6. Ensure reliable and efficient maritime transport** – Stakeholders in the maritime supply chain, including carriers, ports, inland transport providers and shippers, should work together to ensure that maritime transport remains a reliable, predictable and efficient mode of transport. This will require investing in shipping and ports and their hinterland connections while devising and implementing sustainable freight transport solutions. It will also require proper implementation of trade facilitation measures and digital tools and technologies.

7. Mainstream supply chain resilience, risk assessment and preparedness – This can be achieved through a portfolio of measures,

including dual sourcing, redundancy across suppliers, and backing up production sites, inventory, and stocks, along with better risk management, and end-to-end transparency. Typically, this will involve assessing and managing risks, enhancing preparedness and adopting hybrid solutions that are flexible and agile, and arrive at balanced trade-offs, for example, between nearshoring and reshoring and combining hybrid supply chain models, along with measures to reduce vulnerabilities to cyberattacks.

8. Control costs – Freight costs can be contained by expanding capacity to match demand, making ports more efficient, improving planning, forecasting and visibility, and implementing trade facilitation measures. The maritime transport market should also be transparent, fair and competitive. National competition authorities therefore need the capacity to monitor trends in freight rates, fees and charges. Stakeholders along the maritime supply chain including carriers, ports, inland transport providers, customs, and shippers should work together to share information and make maritime transport more efficient.

9. Decarbonize – The shipping industry, in cooperation with governments, will need to explore alternative fuels, invest in landside infrastructure and replace older vessels with larger and more fuel-efficient ships. This will require a predictable environment at the global level but in addition, structurally weak developing countries will need help to mitigate transition costs and the lower connectivity that could result from decarbonizing maritime transport. Developing countries will also need to gain a better understanding of how new regulations will affect the maritime transport services. Integrated post-pandemic recovery planning and stimulus packages should earmark resources for environmental sustainability, aiming for green, low-carbon maritime transport.

10. Climate-proof maritime transport – Countries should anticipate, prepare for and adapt to climate change by fully understanding the risks, exposure, and vulnerabilities, and by building adaptive capacity across the maritime supply chain. For developing countries, including the most vulnerable groups of countries, building back better after the pandemic will mean scaling up investment and building national capacities in climate-proofing.

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