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**Multi-year Expert Meeting on Transport,  
Trade Logistics and Trade Facilitation**  
Eighth session  
Geneva, 27 and 28 October 2020

**Report of the Multi-year Expert Meeting on Transport,  
Trade Logistics and Trade Facilitation on its eighth session**

Held at the Palais des Nations, Geneva, on 27 and 28 October 2020



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## Introduction

The eighth session of the Multi-year Expert Meeting on Transport, Trade Logistics and Trade Facilitation was held on 27 and 28 October 2020 in a virtual format. Discussions focused on climate change adaptation for seaports in support of the 2030 Agenda for Sustainable Development.

### I. Chair's summary

#### A. Opening plenary meeting

1. The Chief of the Trade Logistics Branch of UNCTAD opened the eighth session of the Multi-year Expert Meeting on Transport, Trade Logistics and Trade Facilitation. In his opening statement, he noted that the coronavirus disease (COVID-19) pandemic had reminded everyone of the vulnerabilities of the global trading system and of the need to take heed of the science to prepare for future challenges. He stated that the major challenge to achieving the resilient maritime supply chains of the future was climate change, including both mitigation and adaptation aspects. There were two important cross-cutting issues related to climate change adaptation for seaports, namely the digitalization and decarbonization of the maritime sector. To keep up with developments in these two areas, the most vulnerable economies, in particular small island developing States and the least developed countries, needed to benefit from potential funding and receive any necessary technical and financial support. In this context, UNCTAD programmes in support of transport and trade facilitation were in high demand, such as the Automated System for Customs Data and those related to port management, trade information portals, single windows, electronic commerce assessments, transit cargo tracking and, in general, digitalization. Digital solutions not only made shipping easier but also reduced risks for seaports and their workers and society at large. Digitalization was also important in climate change adaptation, in particular for effective risk assessment and planning, as well as in the generation and dissemination of tailored data and information. Finally, the Chief highlighted the launch on 12 November 2020 of the fifty-second issue of the UNCTAD flagship publication *Review of Maritime Transport* and drew attention to a legacy issue highlighted therein that had been brought into sharp focus by the pandemic and was also related to the topic of the current session of the Multi-year Expert Meeting, namely, the significant need for systemic and coordinated policy responses at the global level.

2. The Chief of the Policy and Legislation Section of the Trade Logistics Branch of UNCTAD provided some background and context on the topic of the session. She noted that with over 80 per cent of the volume and 70 per cent of the value of world merchandise trade carried by sea, from port to port, shipping and ports were key nodes in the network of closely linked international supply chains. The climate resilience of transport infrastructure, including seaports, was of cross-cutting relevance to the achievement of progress on several of the Sustainable Development Goals and targets, including Goals 9 and 13 and target 1.5, as well as to measures in support of Goal 14. Climate change and extreme events were likely to have direct and indirect impacts on maritime transport infrastructure, operations and services, with potentially wide-ranging economic costs and trade-related repercussions, including for the sustainable development prospects of the most vulnerable countries, such as small island developing States and the least developed countries. Therefore, enhanced climate resilience and adaptation for ports and other key transport infrastructure was of strategic economic importance. Relevant related work by UNCTAD, since 2008, included a number of expert meetings, technical cooperation projects, studies and reports, as well as peer-reviewed papers. Finally, the Chief underlined the urgent need for accelerated policy action to enhance the climate resilience of seaports and noted that the Multi-year Expert Meeting provided an important forum for discussion that could help inform important upcoming intergovernmental meetings and processes.

## **B. Climate change adaptation for seaports in support of the 2030 Agenda for Sustainable Development**

(Agenda item 3)

### *Understanding the challenge*

3. The first panel discussion focused on understanding the challenge, to set the scene for further discussion. Panellists comprised the Chief of the Policy and Legislation Section of the Trade Logistics Branch of UNCTAD and the Director of the Adaptation Division of the secretariat of the United Nations Framework Convention on Climate Change.

4. The first panellist detailed that the risk of climate variability and change impacts on seaports was a function of changing climatic hazards, the exposure of port infrastructure and operations to such hazards and the level of vulnerability, which depended on the ability to respond effectively. Therefore, all of these factors needed to be assessed for effective risk assessment and seaport adaptation. The panellist presented recent projections of extreme heat, sea levels and water run-off that affected seaports, which illustrated the growing hazards. The adaptation of seaports to climate change effects was urgently needed and presented significant challenges, including technical challenges and those related to capacity, finance, governance, management, policy and legislation. To address such challenges effectively, concerted collaborative action was required, involving all stakeholders, including Governments, industry, civil society, the scientific community and academia. The panellist noted that the results of an UNCTAD port industry survey, conducted to help improve the understanding of weather and climate-related impacts on ports, had revealed important gaps in the information available to seaports of all sizes and across regions, with implications for effective climate risk assessment and adaptation. Lessons learned over the past decade indicated that effective adaptation and resilience-building for seaports required risk assessments, based on the best available science and data, and innovative adaptation responses, including regulation, management and technical measures. Early planning (asset lifespan), adopting a systems approach and mainstreaming climate change considerations into transport infrastructure planning and operations, was critical, as was the incorporation of ecosystem approaches to adaptation in any future strategies. Finally, the following were also important: ensuring funding for technical risk and vulnerability assessments to inform policies, plans and actions; building the capacity of human resources at local levels and ensuring better access to climate finance; integrating relevant considerations into national adaptation plans and nationally determined contributions; and providing strong legal, regulatory and policy frameworks to support effective adaptation strategies, as well as standards, guidance and methodological tools.

5. The second panellist commended the background note prepared by UNCTAD, which described well the state of knowledge on impacts, vulnerability and adaptation in the context of seaports. From the perspective of the United Nations Framework Convention on Climate Change institutional set-up and support systems, the context of seaports was generally seen as a cross-cutting theme that was often diluted within other priority themes, including food security, tourism, extreme events and migration. The unique role of seaports, often as a lifeline of support and of survival in the wake of hydrometeorological disasters, meant that a fresh look was needed at how impacts, vulnerability and adaptation were integrated into the relevant mechanisms of the Convention, in particular national adaptation plans, which were designed to provide an avenue for prioritization and international support for medium and long-term adaptation action. Such plans benefited from mandated funding from the green climate fund and offered good opportunities for concrete medium and long-term support. The panellist noted that, in general, adaptation planning funds and support tools for adaptation were not lacking. In addition, the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts, in the context of the Convention, was in the process of developing knowledge of how to deal with consequences not envisaged at the time of planning. Important opportunities to accelerate action included the following: (a) a paradigm shift created by science in terms of heightened awareness of the need for the rapid transformation of socioeconomic systems, without which there could be significant negative consequences in terms of prosperity and growth levels, as evidenced in both the special report of the United Nations Intergovernmental Panel on Climate Change in 2018 on the impacts of

a global temperature increase of 1.5°C above pre-industrial levels and the Global Biodiversity Outlook report under the Convention on Biological Diversity; (b) the development of more forward-looking approaches for adaptation, incorporating resiliency and embracing a “building forward better” concept; (c) and the availability of frontier technologies, including artificial intelligence, big data, satellites, autonomous systems and drones; (d) as well as the window of opportunity to achieve more investment in rebuilding and upgrading infrastructure in the coming decade, including that of seaports, in a resilient way. Finally, the panellist underlined the importance of building inter-agency cooperation and a community of practice and of intellect, as UNCTAD had been doing in the past decade, as an important first step in moving forward with a new, common data set and tools that would help support countries in assessing vulnerabilities and designing and planning adaptation into the future.

6. During the ensuing discussion, one expert noted the need to raise awareness of the fact that climate change was not only an environmental risk but also a business risk that the private sector needed to take into account in adaptation planning; and that infrastructure needed to be built flexibly, in order that designs could be modified as conditions changed, as locking into one scenario risked maladaptation. With regard to a query from one participant about case studies of seaports that might have been closed as a result of hurricanes and any contingency plans envisaged for such situations, a reference was made to relevant work undertaken by the Economic Commission for Latin America and the Caribbean in the aftermath of the 2017 hurricane season in the Caribbean; a recent United Nations Framework Convention on Climate Change policy brief titled “Technologies for averting, minimizing and addressing loss and damage in coastal zones”; and the importance of partnerships with the private sector in such cases. With regard to a query from another participant about whether any climate change vulnerability assessments had been conducted of Mediterranean seaports and any response actions identified, one panellist noted that countries in the region had not yet submitted national climate change adaptation plans. In recent years, vulnerability to hurricanes had increased and some assessments had been undertaken, yet more work was needed for issues related to climate change impacts and the adaptation of seaports to become a priority. Another panellist also noted that the Mediterranean region was likely to be affected by increasing levels of extreme heat, with baseline 1 in 100-year extreme events expected to occur once every 1–5 years starting in around 2050.

*Climate change impacts and adaptation: Key issues and experiences, recent initiatives and developments, part 1*

7. The first part of the second panel discussion focused on key issues and experiences, recent initiatives and developments. Panellists comprised a researcher from the European Commission Joint Research Centre; the Chair of the Permanent Task Group on Climate Change of the World Association for Waterborne Transport Infrastructure (PIANC); an associate professor from the University of Rhode Island, United States of America; a professor from the University of Manitoba, Canada; and a senior climate specialist from the International Finance Corporation, World Bank Group.

8. The first panellist presented a number of detailed findings from the Large Scale Integrated Sea-level and Coastal Assessment Tool of the European Commission Joint Research Centre, a framework to assess future losses from coastal flooding and erosion and adaptive measures. Coastal hazards were becoming one of the greatest natural threats that endangered a large share of the population and physical assets; 44 per cent of the global population lived within 100 km of a coast. Results from recent state-of-the-art flood modelling indicated a median extreme sea level rise of 20–30 cm by 2050 and 51–86 cm by 2100, with higher-end climate scenarios indicating an even greater increase. Extreme sea level events of a certain magnitude that currently had a low recurrence frequency or return period would become more frequent in the future. In particular, present day 1 in 100-year extreme sea level events were projected to occur every year by 2050 along most tropical coastlines and by 2100 along most global coastlines. The panellist underscored the significant nature of the associated costs; for example, in Europe, the present expected annual damage of €1.25 billion was projected to increase by 100–1000 times by 2100. He emphasized the prevailing nature of climate-related factors in triggering losses, in contrast to historical trends dominated by socioeconomic development. Analysis had shown that greenhouse gas

emissions mitigation could reduce such losses by 40 per cent and adaptation could prevent such losses by 95 per cent and would be particularly beneficial in urban areas.

9. The second panellist provided an overview of several climate change adaptation actions for ports and inland waterways, including the PIANC declaration on climate change that outlined good practices for port resiliency; detailed technical guidance on climate change adaptation planning for ports and inland waterways, comprising a methodological framework, portfolios of measures and case studies; the Marrakech Partnership for Global Climate Action initiative on navigating a changing climate, led by PIANC; and the Climate Action Pathways of the Marrakech Partnership for Global Climate Action that included actions and milestones dedicated to adaptation and resilience-building for transport infrastructure and systems. Initial findings of a port survey on extreme weather events by PIANC had revealed important gaps in the adaptation preparedness of ports globally. Urgent action and a paradigm shift were needed that prioritized flexible design options. The panellist highlighted that there was much to be gained from low-cost, non-structural measures such as risk assessments and contingency plans.

10. The third panellist highlighted insights from a decade of applied research on the topic of advancing climate resilience for global seaports. In addition to direct damages and operational disruptions, climate change-induced impacts on ports included indirect costs and intangible consequences. Research results underlined the need for a careful assessment of critical construction materials applied to seaport protection and the substantial financial needs; for example, elevating 100 ports in the United States by two meters would require \$57 billion–\$78 billion. Research also indicated that while ports were increasingly aware of climate change risks, port decision makers still faced barriers that hindered effective adaptation, including a lack of understanding, low perception of risks, lack of funding, physical constraints, governance challenges and a lack of appropriate infrastructure design guidance. At the same time, opportunities had been identified for overcoming barriers, including unique resilience strategies, risk assessments, fostered collaborations, regulatory changes and the development of financial incentives. There was a need for a fundamental shift in thinking with regard to adaptation planning, considering the long lifespan of port assets. Policymakers needed to support the development of flexible sea-level-rise regulatory guidance documents for infrastructure engineers. Funding to support collaborations for long-term resilience planning was needed, along with capacity-building for infrastructure practitioners.

11. The fourth panellist presented challenges associated with climate change adaptation for Arctic ports and suggested possible approaches. Climate change might induce positive changes, such as the opening of new polar navigation routes. The exploitability of such alternatives was hindered, however, by, among others, major challenges faced by Arctic ports, including isolation and demanding physical conditions; a lack of capacity of basic facilities and limited hinterland connections; and gaps in terms of clear socioeconomic goals and port positioning in global supply chains. There was a need to develop a clear vision for the Arctic with regard to shipping and port infrastructure, which should involve a bottom-up approach and small-scale start-up. Ports needed to be treated as system components and there was a need to re-evaluate the port and infrastructure planning process and its governance system based on a “balanced approach” to development. Finally, the panellist noted that the unique circumstances in the Arctic required targeted capacity-building.

12. The fifth panellist presented an outline of the experiences and practices of the International Finance Corporation in identifying, assessing, managing and financing climate risks, including for ports, and an overview of related recent developments. He underlined that the Multi-Year Expert Meeting was a valuable forum of exchange on the topic. The climate approach of the International Finance Corporation comprised the identification and assessment of climate risks in terms of potential materiality to the actual investment, followed by risk management (for example, design). There had been a recent increase in the resilience type of investments as climate risks were increasingly becoming an area of focus for investors, rating agencies, regulators and legislators. Recent initiatives in this area such as the Task Force on Climate-related Financial Disclosures further indicated the need for the prioritization of climate risk management and adaptation. Finally, climate risk management and related business planning might help attract necessary financial flows for resilience.

13. During the ensuing discussion, one expert presented the policy context for climate change adaptation in Ireland and stressed the importance of an appropriate policy and regulatory framework underpinning adaptation. Another expert drew attention to the value of International Organization for Standardization standards for ports, in particular Standard 14090: Adaptation to climate change – Principles, requirements and guidelines. Finally, with regard to a query on adapting existing infrastructure, one panellist highlighted the need for policy and regulatory frameworks to require port risk assessments as a basis for business planning.

*Climate change impacts and adaptation: Key issues and experiences, recent initiatives and developments, part 2*

14. Panellists for the second part of the second panel discussion comprised a professor from Waseda University, Japan; the Head of Environmental Policies, speaking on behalf of the Head of Sustainability Transition, of the Port Authority of Valencia, Spain; and the Chief of the Human Resources Development/Train for Trade Section of the Knowledge Development Branch of UNCTAD.

15. The first panellist described existing adaptation measures at ports to rising sea levels, noting that there was widespread concern in academia and the media that many coastal communities would be forced to relocate in the face of rising levels. He analysed a number of instances of land subsidence that had previously taken place, such as in low-lying coastal areas of Tokyo, at ports in Jakarta and along coral islands on the Danajon Bank in the Philippines, in which the inhabitants of densely populated coastal areas had remained in place, despite the challenge of living with higher water levels. The panellist stressed that, through such case studies, the actual adaptation pathways of ports could be better understood. Therefore, while it was clear that sea level rise would pose an additional financial strain on ports, a range of adaptation options were available, and there was no evidence at present that any major coastal settlements would give up a significant portion of their land area to the sea. Instead, new lines of defence could be built further into the water. Finally, the panellist noted that interviews with port officials indicated that there were few barriers to adaptation, although the related costs could amount to a substantial “environmental tax” that would burden the societies that would need to pay and would have a particularly disproportionate effect on developing countries.

16. The second panellist presented initiatives being developed at the Port Authority of Valencia in relation to climate change, including figures related to port traffic and the related impacts on the environment. He outlined various initiatives, policies and projects in relation to climate change, including the calculation and monitoring of carbon footprints and several adaptation projects. Further research needed to be carried out to assess the potential impacts of climate change on port infrastructure. As climate change was a global problem that needed to be tackled globally, each entity or individual within their possibilities and competencies needed to invest resources towards minimizing its impacts. Emission reduction targets needed to be ambitious, but also realistic. Industry and academia therefore needed to play a key role in advising regulators to set such targets.

17. The third panellist presented the Port Management Programme as part of the Train for Trade programme, which aimed to ensure efficient and competitive port management services to increase trade flows and foster sustainable economic development. The Port Management Programme covered 60 countries and 3,700 port managers worldwide. Its training course on the challenges of sustainable ports included a module that covered a range of climate change-related and environmental topics that included challenges related to climate change, extreme weather and sea level rises; and to mitigation, impacts, adaptation, resilience and capacity-building measures. In addition, the port performance scorecard and the Train for Trade port management series contained useful case studies on pollution, energy and the environmental impact of port activities. The panellist also detailed the way forward and identified priorities for the programme, which included integrating policy recommendations from this session of the Multi-year Expert Meeting into capacity-building activities for Port Management Programme networks; promoting research on climate change and environmental subjects as case studies; highlighting best practices and commercially viable port projects; engaging port managers in establishing the leading priorities for port

investment and climate change-related activities; and supporting collaborations between port communities and international institutions to help achieve the Sustainable Development Goals.

18. During the ensuing discussion, with regard to a query from one participant about green agreements that the Port of Valencia had concluded with shipping companies and other stakeholders using the port, including on the reductions of their carbon footprints, the panellist from the Port Authority of Valencia detailed that the parties to such agreements, including shipping lines, benefited from rebates to relevant taxes, provided they complied with certain requirements related to, among others, emissions, the types of fuel used and connections to electrical grids in ports, and that, often, such agreements contained a condition that a percentage of such rebates should be reinvested in green improvements. With regard to a query from one delegate on existing cooperation among seaports in the Mediterranean region and exchanges of knowledge and experience on how to address climate change impacts, reference was made to an initiative of the European Union for cooperation among ports from the North and South Mediterranean regions; and work at the Medports Association, including drafting of a paper based on responses to a questionnaire sent to ports in the region. Another participant suggested that the topic of climate change adaptation for seaports deserved special emphasis at the fifteenth session of the United Nations Conference on Trade and Development to be held in Barbados, which could be a relevant platform for further discussion and cooperation on the issue. The panellist from PIANC highlighted the potential implications that some of the less-mentioned climate-related factors, such as increasing temperatures and fog, might have on port operations and the need to address them; for example, business problems might arise for port operations and infrastructure in the event of an increase in invasive non-native species due to warming waters. In this context, two panellists underlined the importance of looking into such issues, which had to date not been sufficiently studied, and including them in port strategies and master plans, in collaboration with partners at the regional level.

*Cross-cutting issues: Energy efficiency, climate change mitigation and decarbonizing maritime transport*

19. The third panel discussion focused on cross-cutting issues such as energy efficiency, climate change mitigation and the decarbonization of maritime transport, which were of particular relevance given that energy needs and costs might rise due to the impacts of climate change. Panellists comprised the Technical Director of the World Ports Sustainability Programme of the International Association of Ports and Harbours, a technical director from the International Chamber of Shipping and the Chief of the Transport Section of the Trade Logistics Branch of UNCTAD.

20. The first panellist discussed the World Ports Sustainability Programme which built on the world ports climate initiative and, guided by the Sustainable Development Goals, was implemented in five main priority areas, including climate and energy, which was the focus of one third of the submitted port projects. Projects also prioritized Goal 13 and other climate-related Goals such as Goal 7. While highlighting the importance of decarbonizing maritime transport, the panellist recalled resolution MEPC.323(74) of the Marine Environment Protection Committee of the International Maritime Organization, which invited member States to encourage voluntary cooperation between the port and shipping sectors to contribute to reducing greenhouse gas emissions from ships. He noted that climate and energy were the leading priority issues for world ports and that stakeholders needed to work together. Key messages regarding ways in which ports could actively assist in the decarbonization of shipping included offering incentives to best-performing vessels, providing onshore power supplies, ensuring the safe and efficient bunkering of clean marine fuels and enabling the optimization of port calls.

21. The second panellist provided an overview of some of the cross-cutting issues facing both shipowners and ports. He stated that regulatory changes were expected to transform the industry as it continued to respond to climate change and transform to a zero-carbon future and he noted that shipowners were supportive of carbon-free initiatives. The International Chamber of Shipping supported high standards of safety and environmental protection and engaged proactively with the International Maritime Organization to support the



development of new regulations. However, such regulations needed to be proportionate, evidence-based and implementable. With technological transitions, tensions might arise between environmental regulations and safety. Adopting new technologies made infrastructures and ships more complex and this resulted in greater risks with regard to both safety and commerce. He noted that instead of using only alternative fuels, simpler methods should be utilized, including ensuring zero emissions through berth-related technologies such as onshore power supplies, increased digitalization and optimized operations, as well as the use of wind-generated energy. In this context, the International Chamber of Shipping and other international organizations had proposed the establishment of an international maritime research board, to fund the research and development of new technologies through a mandatory levy of \$2 per ton of fuel. This would help identify viable technology pathways, accelerate the development and commercialization of new technologies and mitigate the risks associated with the ongoing technology transition.

22. The third panellist highlighted that energy consumption was one of the top priorities for ports. Ports took into consideration energy usage and management, to improve economic and environmental performance. Relevant port energy efficiency measures, including operational strategies, innovative technologies and energy management systems, contributed to building the climate resilience of ports and served as key climate adaptation tools. Adapting ports to climate change impacts required improving energy consumption through management practices and technologies that maximized operational productivity and cost effectiveness, as well as the planning and mobilization of clean energy resources, to ensure the availability and accessibility of energy and both the continuity of services and operations and the improvement of the environmental performance of ports. In addition, promoting collaboration, exchanges of information and best practices, the building of capacities and the scaling-up of green investment was key. Finally, the panellist highlighted UNCTAD work related to port energy efficiency, the use of clean energy for port operations and the promotion of sustainable freight transportation systems, including through the sustainable freight transport toolkit.

23. During the ensuing discussion, the Deputy Minister for Planning and Information of the Ministry of Transport of Saudi Arabia detailed the National Transport Logistics Strategy 2030 of Saudi Arabia and noted that strategic objectives involved maritime trade and climate change. He highlighted specific programmes delivering on these objectives and explained that the strategy had developed an optimized multimodal transportation and logistics master plan, based on which port capacity would be expanded, airport capacity upgraded, rail routes developed and a high quality network of logistics zones established, to enable intermodal interfaces, electronic commerce and other modes of trade. Finally, he emphasized the commitment to focusing on climate change adaptation and the reduction of carbon dioxide emissions and consumption of fuel with direct impacts on climate change. Another delegate shared the experience of the Port of Kribi, Cameroon, stating that climate change was an important consideration for its infrastructure. The port had developed a 10-year master plan envisaging different solutions with regard to the management of climate-related impacts. In addition, the port had concluded an agreement with stakeholders that aimed to manage and mitigate as much as possible the impacts of different activities and this was supported by daily monitoring and the development of regulations to resolve any potential issues that might arise.

*The special case of small island developing States and other small island economies*

24. Panellists for the fourth panel discussion comprised the Coordinator for Climate Change and Disaster Risk of the Commission of the Organization of Eastern Caribbean States, the Director of Quality and Innovation of Smith Warner International, Jamaica, the Assistant General Manager of the Port Authority of Maldives and an economic affairs officer from the Economic Commission for Latin America and the Caribbean.

25. The first panellist addressed the issue of climate change, seaports and the Sustainable Development Goals with regard to member States of the Organization of Eastern Caribbean States. Small island developing States in general were characterized by their geographic remoteness, high level of susceptibility to external shocks and small domestic markets, among others. They were also particularly vulnerable to climate change effects due to their

locations and limited resilience to natural disasters. The seaports on which these States relied for key economic sectors, such as trade, transport and tourism, were critical infrastructure assets that stood to be severely impacted by climate change-driven factors, as demonstrated by the 2017 hurricane season in the Caribbean. Climate-related impacts adversely affecting coastal transport infrastructure, including seaports, airports and hinterland connections, caused serious indirect effects on strategic economic sectors, imposed severe fiscal strains and endangered development prospects. Against this background, climate change-related effects on seaports in the Organization of Eastern Caribbean States region held significant implications for the achievement of several of the Sustainable Development Goals. There was an urgent need to factor climate change considerations into port development, operations and management, through a multilayered approach supported by policy action, for example with regard to national adaptation plans. The assessment by UNCTAD of climate change-related impacts on coastal transport infrastructure in select Caribbean States, revealing the high and growing level of risk of coastal flooding and operational disruptions occurring from as early as the 2030s, laid the basis for building resilience for coastal transport infrastructure in the Caribbean. Finally, the panellist stressed the pressing need for this work to be continued, deepened and expanded by UNCTAD to the entire Organization of Eastern Caribbean States region, in collaboration with others, in order to assess climate-related risks and develop technical and policy solutions using a network approach.

26. The second panellist reiterated the significance of coastal transport infrastructure in the Caribbean and proposed that environmental monitoring be mainstreamed for port operations in the region, to enhance resiliency. Given the anticipated inexorable impacts from climate change on critical coastal transport infrastructure in the Caribbean, the panellist suggested a new paradigm, to allow port operators to better understand their natural environment, including changing climate trends and their impact on land and sea. Enhancing port resiliency in this way would be directly beneficial for national resiliency in small island developing States in the Caribbean prone to natural disasters. The recommended environmental monitoring comprised at least three impact streams and relevant parameters that could be monitored, including operational impacts (waves, currents, water levels, winds and rainfall intensity), ecological impacts (water quality, oil management, hazardous material disposal, terrestrial and aquatic impacts, airborne emissions and underwater noises and vibrations) and societal impacts (noises and vibrations and changes to adjacent landforms and/or unintended impacts on adjacent enterprises). Different time scales might be associated with the different components, but data collection for monitoring operational impacts was possible on a real-time platform to facilitate decision-making.

27. The third panellist highlighted the urgent existential threats faced by Maldives and the Male' Commercial Harbour, the principal maritime gateway, due to climate change. The projected rise in sea levels could lead to a complete inundation of Maldives, the lowest lying country in the world, by about 2085. Uncertain and changing weather patterns in the form of floods and coastal inundation had already challenged the transportation system. The climate-related vulnerability was coupled with the critical nature of ports for the economy and livelihoods due to the reliance on tourism and a significant dependence on food imports. In addition to climatic factors, natural limitations with regard to infrastructure further contributed to port vulnerability, causing wide-ranging negative impacts such as effects on the health of workers, damage to cargo and loss of operational time. Without a well-functioning and climate-resilient port, the entire logistics services of Maldives might come to an end. Against the background of examples of coastal inundation and temperature rise that compromised port operations and of port development activities that jeopardized natural habitats, the panellist recommended a green port concept, the development of a sector-specific climate resilience plan and a climate resilience plan for Male' Commercial Harbour. The new port of Maldives should be a climate resilient port. There was a need for awareness-raising, targeted capacity-building and enhanced collaboration at the national (for disaster management), regional (for crisis management and knowledge transfer) and global levels.

28. The fourth panellist provided a regional perspective of the criticality and the vulnerability to climate change of Caribbean coastal transport infrastructure and underscored the implications of the COVID-19 pandemic for the adaptation of seaports. He reiterated the critical nature of coastal transport infrastructure for small island developing States in the Caribbean, demonstrated by high levels of trade openness along with a strong dependence on

tourism services in particular cruise-related tourism (for example, the tourism sector in Antigua and Barbuda contributed to over 70 per cent of the gross domestic product). The climate vulnerability of seaports and airports to the impacts of rising sea levels and the increased frequencies of natural events not only required climate change adaptation but also the building of enhanced local and regional transportation redundancies, to minimize economic and social disruptions in small shipping markets spread across large maritime geographic regions. Recent extreme weather events in the Caribbean had underlined the necessity of considering this complex issue of transportation redundancy in the context of climate resiliency-building. The panellist underscored the value of recent UNCTAD work in select small island developing States in the Caribbean on climate change impacts and adaptation for coastal transport infrastructure (see [sidsport-climateadapt.unctad.org](https://sidsport-climateadapt.unctad.org)) and reiterated its usefulness in informing future climate change adaptation strategies and policies for critical transportation infrastructure in the Caribbean. Low liner connectivity indices for many small island developing States in the Caribbean implied that reduced import capacity due to the pandemic could motivate the further consolidation of short-sea commercial shipping services. The reality of the global health crisis had important implications for adaptation, as public health considerations for passengers at seaports become even more important.

*Interactive discussion on conclusions, key messages, recommendations and areas for further work*

29. At the outset of the fifth panel discussion, the UNCTAD secretariat presented key messages and recommendations as submitted by the panellists, to facilitate the interactive discussion on ways forward. Notwithstanding additional priorities arising from the ongoing global health crisis, policymakers needed to consider the range of important messages, comments and recommendations conveyed throughout the discussions, to advance the important issue of climate resiliency for seaports. The global COVID-19 pandemic might serve as a cautionary tale and offer valuable lessons in terms of the need for early action and preparedness, to ensure the resiliency of seaports in changing climatic conditions.

30. In his closing remarks, the Chair noted that the discussions on the important topic of climate change adaptation for seaports in support of the 2030 Agenda for Sustainable Development had been inspiring and productive, and expressed his sincere appreciation to all participants for their invaluable insights and contributions. The experts had noted that seaports were critical facilitators of global trade and development and, at the same time, were at considerable and growing risk of climate change effects. The severity of the potential impacts on seaports and other coastal transport infrastructure had been highlighted by many panellists, along with the important economic costs of inaction and the risks to sustainable development, in particular for the most vulnerable, including small island developing States. An important message was that climate-related risks for seaports needed to be understood and approached as a business risk, rather than only an environmental risk. The immediate challenges posed by the pandemic should not divert attention from the threats posed by climate change. It was clear that much was at stake and the need to adapt and strengthen the climate resilience of seaports was both important and urgent. Failure to adapt was not an option, yet effective adaptation required an understanding of the risks at the local and facility levels and the development of appropriate technical solutions, as well as finance and capacity-building, coordinated policy responses and supportive legal and regulatory approaches. The United Nations Framework Convention on Climate Change process provided good entry points for addressing climate change impacts on ports, including as part of the process of formulating and implementing national adaptation plans, and there was scope for a greater cross-cutting integration of such issues. The deliberations at this session of the Multi-Year Expert Meeting had been thought-provoking and made the case for urgent action. The message was clear and it was now up to all stakeholders to consider what they might be able to contribute to what needed to be a collective effort. Finally, the Chair conveyed his appreciation to UNCTAD for its extensive work on the subject, which had been highlighted by many experts with appreciation, and encouraged continued assistance from UNCTAD in tackling the important related challenges that needed to be overcome, in order to ensure that seaports would be climate resilient well into a sustainable future for all.

31. Key messages and recommendations that emerged from panellists and experts at the meeting included the following:

- Adapting seaports to climate change is urgent and presents significant challenges, including technical, capacity, finance, governance, management, policy and legislation-related challenges, and addressing these effectively requires concerted collaborative action, involving all stakeholders, including Governments, industry, civil society, the scientific community and academia.
- There is an urgent need for strong legal, regulatory and policy frameworks to underpin effective adaptation, as well as adequate financing, including for effective risk assessments and capacity-building.
- Industry guidance developed by the World Association for Waterborne Transport Infrastructure (PIANC), as well as guidance developed by UNCTAD and standards, such as International Organization for Standardization Standard 14090: Adaptation to climate change – Principles, requirements and guidelines, may further assist the port community in building resilience.
- The United Nations Framework Convention on Climate Change process provides important entry points for addressing climate change impacts on ports, including as part of the process of formulating and implementing national adaptation plans, which benefit from mandated funding from the green climate fund and offer good opportunities for concrete medium-term and long-term support.
- There is a need to raise awareness and build capacity for assessing climate-related impacts, vulnerability and adaptation for ports as a consolidated yet cross-cutting single area within United Nations Framework Convention on Climate Change assessment processes since, at present, such assessments are dispersed across the different sectors and areas that depend on ports and may not capture the full picture.
- The risk of climate variability and change impacts on seaports is a function of changing climatic hazards, the exposure of port infrastructure and operations to such hazards and the level of vulnerability, which depends on the ability to respond effectively; therefore, all of these factors need to be assessed for effective risk assessment and seaport adaptation.
- Rising sea levels will result in more frequent catastrophic events; for example, towards the end of the century, present day 1 in 100-year extreme sea level events may occur every year, and without additional protective measures, annual losses from coastal flooding could increase by 100–1,000 times current amounts.
- Adaptation could prevent 95 per cent of coastal risk-induced losses (and greenhouse gas emissions mitigation could reduce such losses by 40 per cent) and is highly beneficial in urban areas; action may be needed along 19–23 per cent (depending on the greenhouse gas emissions scenario) of the coastline of Europe.
- Ports are at the climate change front line, in particular with regard to extreme weather events, yet levels of preparedness are often low and urgent action, informed by an understanding of the consequences of inaction, is therefore needed, to strengthen resilience and adapt, bearing mind that the climate-related risk for ports is not primarily an environmental risk but rather a business risk.
- There is a need to rethink approaches to the design of ports and other infrastructure and the many uncertainties inherent in climate change make it impractical to design for every eventuality; locking into one scenario risks maladaptation and a better option is to seek out flexible designs that can be modified as conditions change and/or to incorporate engineered redundancy where appropriate.
- Policymakers should support the development of flexible sea-level-rise regulatory guidance documents for infrastructure engineers.
- Policymakers should direct funding to support collaboration for long-term resilience planning and develop accredited training programmes on climate change assessments for infrastructure practitioners, such as port staff.

- There is a need to develop a clear vision for the Arctic area with regard to shipping and port infrastructure, which should involve a bottom-up approach and small-scale start-up, whereby Arctic ports are treated as system components; a re-evaluation of the planning process for ports and their governance is needed through a “balanced approach” to development, along with capacity-building.
- There are no significant technological barriers to adapting to sea-level rise; adaptation will be sequential and is possible even for a rise of over 5 metres, yet the cost of adaptation could amount to a substantial “environmental tax” that will burden the societies that need to pay for it.
- Strengthening resilience and adapting to climate change does not need to be too expensive since, while physical measures can be costly, there is much to be gained from the use of non-structural measures, such as the preparation of risk assessments and contingency plans; the implementation of monitoring and early warning systems; the prioritization of inspections and maintenance; and the introduction of flexible ways of working to maximize adaptive capacity.
- Financial, environmental and social risks related to climate change impacts are increasingly a focus of investors, rating agencies, regulators and legislators, further emphasizing the need to prioritize climate risk management and adaptation; in addition to mitigating material risks and responding to this focus, climate risk management and related business planning may help attract necessary financial flows for resilience-building.
- Climate change is not a problem of rich or poor countries, but a global problem that needs to be tackled globally and, therefore, each entity or individual, within their possibilities and competencies, should not hesitate to invest the resources needed to help minimize the effects.
- Emission reduction targets need to be ambitious but at the same time real and possible, and industry and academia should therefore play a key role in advising regulators to set such targets.
- Ports can actively assist in the decarbonization of shipping by offering incentives to the best-performing vessels, providing onshore power supplies, ensuring the safe and efficient bunkering of clean marine fuels and enabling port call optimization.
- Decarbonization will transform the industry and require new fuels and energy carriers, new technologies, both on board and in ports, and new operational practices; it will therefore require a joint effort by all parties, including shipbuilders, shipowners, ports and shippers.
- Effective climate change adaptation solutions for ports are not only about hard infrastructure, engineering projects and physical layouts, but also the need to transform the current energy, operations, management and planning practices of ports towards more sustainable patterns.
- Climate change impacts on Caribbean seaports hold significant implications for the achievement of several Sustainable Development Goals and there is an urgent need to factor climate change considerations into port development, operations and management in the Organization of Eastern Caribbean States region, through a multilayered approach supported by policy action, for example with regard to national adaptation plans.
- An assessment by UNCTAD of climate change-related impacts on coastal transport infrastructure in select small island developing States in the Caribbean revealed the high and growing level of risk of coastal flooding and operational disruptions from as early as the 2030s; this work laid the basis for building resilience for coastal transport infrastructure and has been useful in informing future adaptation strategies and policies for critical transportation infrastructure in the Caribbean; there is therefore a pressing need for this work to be continued, deepened and expanded by UNCTAD to the entire Organization of Eastern Caribbean States region, in collaboration with other

stakeholders and partners, in order to assess climate-related risks and develop technical and policy solutions, using a network approach.

- The environmental monitoring of Caribbean ports should be integrated into port operations planning, including at least three impact streams, namely, operational, ecological and societal; data collection may be done on a real-time platform with analysis carried out on an annual basis.
- Climate change threatens the very existence of small island developing States and diminishes their existing human capabilities; in particular, islands lose habitats, along with naturally developed protection, which decreases economic activity; rising temperatures affect the health of employees and their productivity, so that communities and ports may be forced to relocate, in particular if resilience has not been built; and increases in ambient temperatures, among others, may also require the adjustment of working hours.
- Developing a sector-specific climate resilience plan and regional integration can ease the burden on small island developing States and new climate resilient ports should be designed to ensure a sustainable future.
- Seaports in small island developing States manage considerable numbers of passengers relative to commercial cargo and the pandemic has important implications for adaptation, as public health considerations for staff and passengers at seaports have become even more important.
- Given natural vulnerabilities, small island developing States need to build both domestic and regional redundancy in transportation, which is a challenge for small shipping markets spread across large maritime geographic regions.

## **II. Organizational matters**

### **A. Election of officers**

(Agenda item 1)

32. The Multi-year Expert Meeting on Transport, Trade Logistics and Trade Facilitation decided to elect its officers through a silence procedure in accordance with the provisions of General Assembly decision 74/544 of 27 March 2020. As no objections were received by 23 October 2020, the Multi-year Expert Meeting elected Mr. Chad Blackman (Barbados) as its Chair and Mr. Michael Gaffey (Ireland) as its Vice-Chair-cum-Rapporteur.

### **B. Adoption of the agenda and organization of work**

(Agenda item 2)

33. The Multi-year Expert Meeting on Transport, Trade Logistics and Trade Facilitation decided to adopt, through a silence procedure in accordance with the provisions of General Assembly decision 74/544 of 27 March 2020, the provisional agenda for the session (TD/B/C.I/MEM.7/22). As no objections were received by 23 October 2020, the agenda was thus as follows:

1. Election of officers.
2. Adoption of the agenda and organization of work.
3. Climate change adaptation for seaports in support of the 2030 Agenda for Sustainable Development.
4. Adoption of the report of the meeting.

**C. Adoption of the report of the meeting**

(Agenda item 4)

34. At its closing plenary meeting, on 28 October 2020, the Multi-year Expert Meeting authorized the Rapporteur, under the authority of the Chair, to finalize the report after the conclusion of the session.

## Annex

### Attendance\*

1. Representatives of the following States members of the Conference attended the session:

Algeria	Mongolia
Barbados	Montenegro
Benin	Morocco
Bolivia (Plurinational State of)	Mozambique
Brazil	Myanmar
Burundi	Nauru
Cameroon	Nigeria
Canada	Oman
Comoros	Pakistan
Cuba	Peru
Côte d'Ivoire	Philippines
Dominican Republic	Portugal
Ecuador	Romania
Egypt	Russian Federation
Eswatini	Saudi Arabia
Fiji	South Africa
Gambia	South Sudan
Georgia	Spain
Guatemala	Sudan
Iceland	Syrian Arab Republic
Iran (Islamic Republic of)	Thailand
Ireland	Togo
Jordan	Tunisia
Kenya	Turkey
Kuwait	Vanuatu
Lebanon	Venezuela (Bolivarian Republic of)
Madagascar	Viet Nam
Malawi	Zambia
Mali	Zimbabwe
Mexico	

2. The following intergovernmental organizations were represented at the session:

Caribbean Community  
 European Union  
 International Finance Corporation  
 Organization of African, Caribbean and Pacific States  
 Organization of Eastern Caribbean States  
 Organization of Islamic Cooperation  
 Permanent Secretariat of the General Treaty on Central American Economic Integration

3. The following United Nations organs, bodies and programmes were represented at the session:

Economic Commission for Latin America and the Caribbean  
 United Nations Framework Convention on Climate Change

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\* This attendance list contains registered participants. For the list of participants, see TD/B/C.I/MEM.7/INF.8.



4. The following specialized agencies and related organizations were represented at the session:

World Trade Organization

5. The following non-governmental organizations were represented at the session:

*General category*

International Network for Standardization of Higher Education Degrees

International Organization for Standardization

LDC Watch

Organisation Camerounaise de promotion de la coopération économique internationale

*Special category*

International Association of Ports and Harbours

International Chamber of Shipping

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