

**Economic and Social Council**Distr.: General
10 March 2022

Original: English

Economic and Social Commission for Asia and the Pacific**Seventy-eighth session**

Bangkok and online, 23–27 May 2022

Item 4 (f) of the provisional agenda*

**Review of the implementation of the 2030 Agenda
for Sustainable Development in Asia and the Pacific:
transport****An efficient and resilient transport and logistics network
in support of supply chain connectivity****Note by the secretariat***Summary*

The state of regional transport connectivity and the most recent projections of the transport outlook for freight in selected parts of the region are presented in the present document, together with a discussion of the possible future gains in sustainability, especially in terms of decarbonizing freight transport. The document also serves to highlight how the activities included in the Regional Action Programme for Sustainable Transport Development in Asia and the Pacific (2022–2026) are expected to contribute to more resilient and sustainable supply chain connectivity.

The Economic and Social Commission for Asia and the Pacific may wish to review the document and consider taking the following actions: (1) provide guidance to the secretariat on scaling up activities for an efficient and resilient transport and logistics network in support of sustainable supply chain connectivity and in line with the Regional Action Programme (2022–2026) adopted by the Fourth Ministerial Conference on Transport (14–17 December 2021); and (2) provide additional guidance on the effective implementation of the relevant activities of the Regional Action Programme as highlighted in the present document.

I. Introduction

1. Transport is essential for the performance of global supply chains, which can be broadly seen as processes to gather resources, transform them into parts and products, distribute finished goods to markets and, in some cases, make these resources available again through recycling and reuse strategies.

2. The exact configuration of the supply chain determines its resilience; for instance, leaner supply chains, while often more cost-effective, tend to have fewer buffers against external disruptions. One of the ways in which trade-offs between efficiency and resilience can be mitigated is by optimizing transport

* ESCAP/78/L.1/Rev.1.

and logistics services. In fact, the availability and affordability of transport are key factors allowing or preventing the implementation of various risk management strategies for supply chains, such as concentration, traceability, inventory and many others, directly influencing supply chain efficiency and resilience.

3. The coronavirus disease (COVID-19) pandemic provided many insights on transport connectivity and supply chain performance. One of the main lessons learned is that there is still great scope for national and regional policies to preserve and enhance supply chain connectivity by making transport and logistics networks more seamless, efficient and resilient. Policy measures, like maintaining essential services at the borders, promoting multimodal transport, efficiently regulating cross-border freight and promoting digitalization, have allowed goods to flow across borders despite domestic lockdowns and other restrictive/protective measures. Three years into the pandemic, the unprecedented surge in maritime freight rates and the critical situation in the international road transport sector are keeping transport connectivity on the map, flagging it as a worldwide challenge to pandemic response and recovery policies. Concerns have also been raised about countries with special needs, such as small island developing States and landlocked developing countries, being disproportionately affected. In other words, enhancing freight transport operations to support supply chain connectivity remains a priority for the duration of the pandemic and its aftermath.

4. The pandemic experience also confirmed that greater resilience in transport connectivity also leads to higher levels of efficiency in the system, especially with the deployment of information and communications technology (ICT) and real-time data sharing across a supply chain in the long term. In this context, the new Regional Action Programme for Sustainable Transport Development in Asia and the Pacific (2022–2026), designed and adopted during the pandemic, includes progressing towards efficient and resilient transport and logistics networks and mobility for economic growth as one of its three overarching objectives, alongside achieving environmentally sustainable transport systems and services, and safe and inclusive transport and mobility.

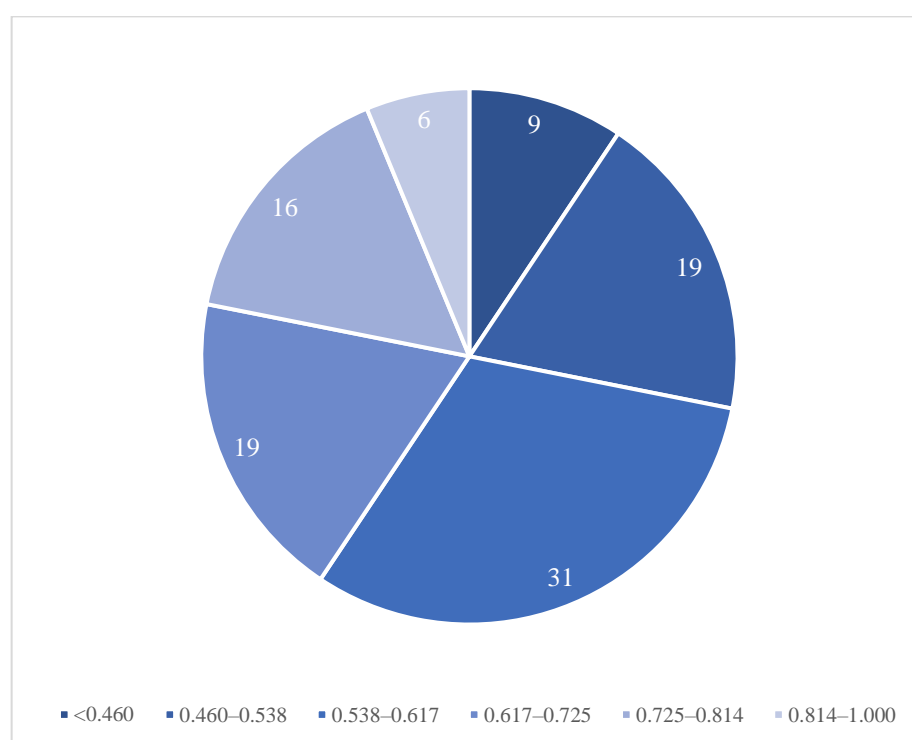
5. Against this background, the present document contains a short introduction on the existing transport and logistics network in Asia and the Pacific and the most recent projections of the transport outlook for freight in selected parts of the region. It then serves to highlight how the new Regional Action Programme (2022–2026) is expected to contribute to enhancing sustainable supply chain connectivity through a wide range of analytical, intergovernmental and capacity-building activities.

II. Current state of the regional transport and logistics network in Asia and the Pacific

6. The levels of transport connectivity of the developing countries in Asia and the Pacific remain highly heterogeneous. This observation is illustrated by the distribution of a sample of the 32 developing Asia-Pacific countries according to their current connectivity estimates by the International Transport

Forum.¹ While two countries in the sample show connectivity levels comparable to the highest-performing countries globally, three countries show the lowest levels of transport connectivity worldwide, and the majority, 25 countries, show connectivity levels below 0.725 threshold of the highest index score range of transport connectivity observed at the global level (see figure I). Moreover, countries with special needs and, more specifically, landlocked developing countries and small island developing States, show the lowest level of connectivity in average, median, minimum and maximum values, demonstrating the persisting connectivity gap in the region.

Figure I
Connectivity levels of selected Asia-Pacific countries
(Percentage and current connectivity index scores)



Source: Organisation for Economic Co-operation and Development, *International Transport Forum (ITF) Transport Outlook 2021* (Paris, 2021).

Note: The sample comprised the following countries, areas and territories: Afghanistan; Armenia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; China; Democratic People's Republic of Korea; Fiji; Georgia; Hong Kong, China; India; Indonesia; Iran (Islamic Republic of); Kazakhstan; Kyrgyzstan; Lao People's Democratic Republic; Malaysia; Mongolia; Myanmar; Nepal; Pakistan; Papua New Guinea; Philippines; Singapore; Sri Lanka; Tajikistan; Thailand; Turkmenistan; Uzbekistan; and Viet Nam. The representative threshold is 0.725. Most of the sample countries are found under this threshold. The maximum value is 1, as connectivity is measured as a portion of the connectivity level of the best-connected country, which is assumed to equal to 1.

¹ This approach for measuring connectivity is a gravity-based model which measures how many opportunities (with the size of the gross domestic product as a proxy for trading opportunities) can be reached from each country relative to other countries. The explanatory components are calculated for road, rail and maritime transport modes and include distance, transport cost (including border crossing and handling cost), travel time (speed) and border crossing time.

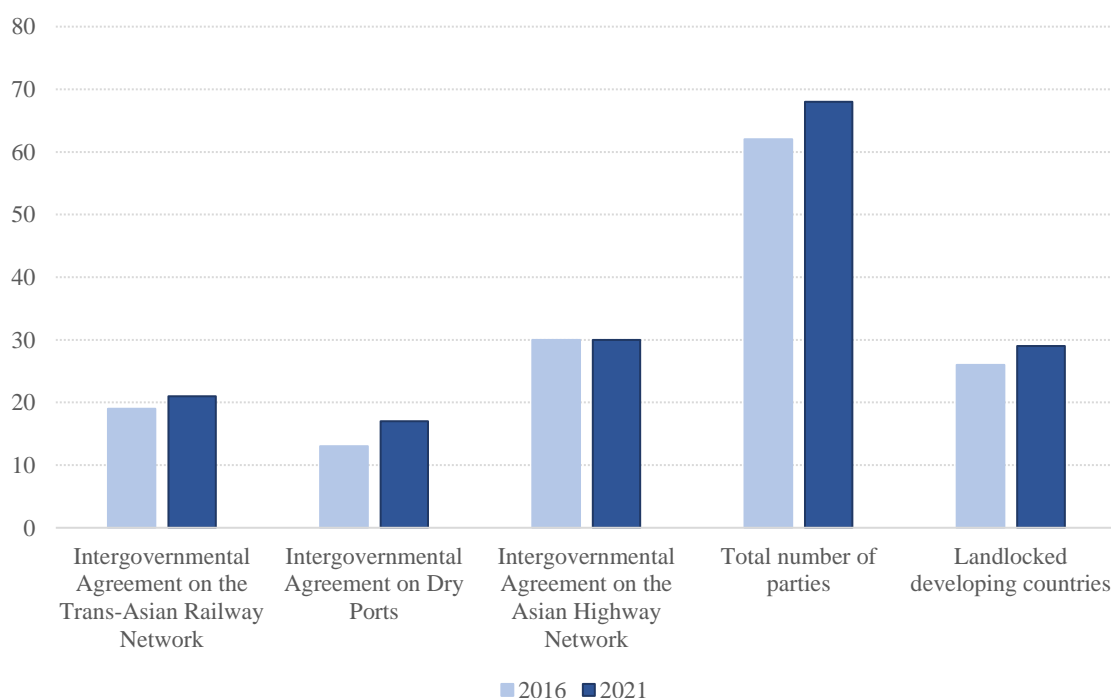
7. At the same time, the regional transport and logistics network in Asia and the Pacific is becoming increasingly institutionalized and formalized.

8. The Intergovernmental Agreement on International Road Transport along the Asian Highway Network, which entered into force in July 2005, now counts 30 parties and comprises more than 145,000 km of roads connecting all parts of Asia and all the capitals of the network's member countries. The Trans-Asian Railway network, formalized through the Intergovernmental Agreement on the Trans-Asian Railway Network, which entered into force in June 2009, now counts 21 parties, and the network consists of nearly 118,000 km of railway lines, spanning 28 countries. The Intergovernmental Agreement on Dry Ports, which entered into force in April 2016, currently counts 17 parties and lists 269 dry ports.

9. The increase in the participation of the countries with special needs, in particular the landlocked developing countries, in these Intergovernmental Agreements is particularly visible in the recent years, with three more landlocked developing countries joining the Agreements, as shown in figure II.

Figure II

Participation in the Intergovernmental Agreements on the Asian Highway Network, the Trans-Asian Railway Network and Dry Ports
(Number of parties)



Source: Economic and Social Commission for Asia and the Pacific (ESCAP) calculations based on data from the United Nations Treaty Series Online database. Available at https://treaties.un.org/pages/AdvanceSearch.aspx?tab=UNTS&clang=_en (accessed on 7 February 2022).

10. The development of the networks remains dynamic. Several additions and updates to the Asian Highway network, the Trans-Asian Railway network and the emerging regional network of dry ports of international importance have taken place over the course of the last five years, as reflected in the adopted amendments to the Intergovernmental Agreements (see table 1).

Table 1
Adopted amendments to the Intergovernmental Agreements on the Asian Highway Network, Trans-Asian Railway Network and Dry Ports

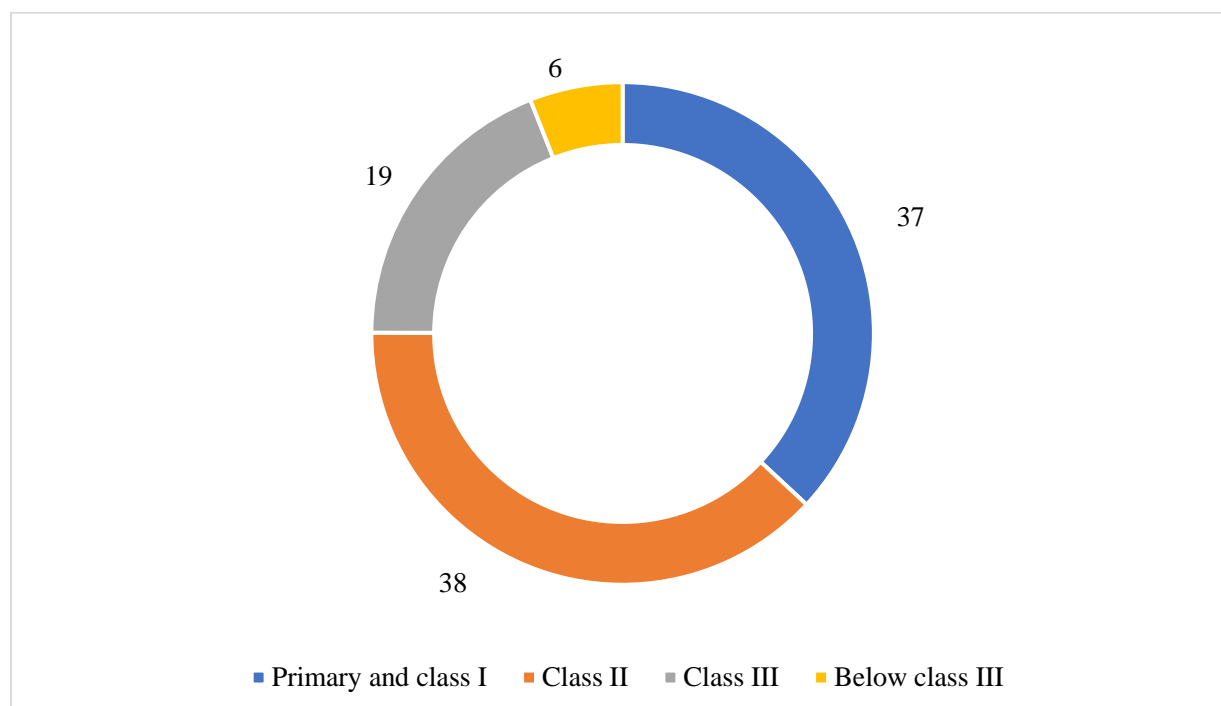
	<i>Asian Highway network</i>	<i>Trans Asian Railway network</i>	<i>Dry ports</i>
2017	Addition of route AH35 by Mongolia Updating of routes AH43 by Sri Lanka	Amendment to the railway routes in Cambodia Amendment to the railway routes in Thailand	Removal of 1 dry port by Thailand
2019	Updating of routes AH1, AH3, AH6, AH31, AH32, AH33, AH34 and AH42 by China Updating of AH5 by Georgia Addition of route AH9 by the Russian Federation Addition of route AH88 by the Islamic Republic of Iran	Amendment to the railway routes in the Islamic Republic of Iran Amendment to the railway routes in the Russian Federation	Addition of 7 new dry ports by India Addition of 1 new dry port by the Russian Federation Update of dry port list by Kazakhstan
2021	Updating of route AH21 by Cambodia and AH52 by Pakistan	Amendment to the railway routes in Myanmar Amendment to the railway routes in Tajikistan Amendment to the railway routes in Turkey	Update of dry port list by Myanmar Addition of 19 dry ports by the Russian Federation

Source: Reports of the Working Groups on the Asian Highway Network, Trans-Asian Railway Network and Dry Ports, 2017–2021.

11. While the bulk of the regional transport network has already been built, there are still missing road and railway links and potential for greater dry port development in the region. Of the Trans-Asian Railway network, 12,400 km remains to be constructed, and 88 of the 269 dry ports included in the Intergovernmental Agreement on Dry Ports are still listed as “potential”.

12. The quality of the transport infrastructure in the region also remains an important area of concern. According to current estimates, as shown in figure III, 37 per cent of the Asian Highway network routes are categorized as primary and class I, 38 per cent are class II, and one quarter are class III or below. Road quality also varies substantially by subregion. In North-East Asia and South-West Asia, 60 per cent of the network consists of primary and class I roads. In North and Central Asia, 55 per cent of the network consists of class II roads, while primary and class I roads account for less than 20 per cent. In South Asia, more than one third of the network consists of class III roads.

Figure III
Distribution of Asian Highway routes by road classification
 (Percentage)



Source: ESCAP, Asian Highway database. Available at www.unescap.org/our-work/transport/asian-highway/database (accessed on 7 February 2022).

13. Alongside regional land transport, maritime transport plays a crucial role in keeping supply chains operational. The Asia-Pacific region currently accounts for two thirds of global seaborne trade and is home to more than half of the busiest seaports worldwide. Fifteen of the top 20 ocean container carriers and shipping companies in the world and 7 of the top 10 global terminal operators are based in Asia.

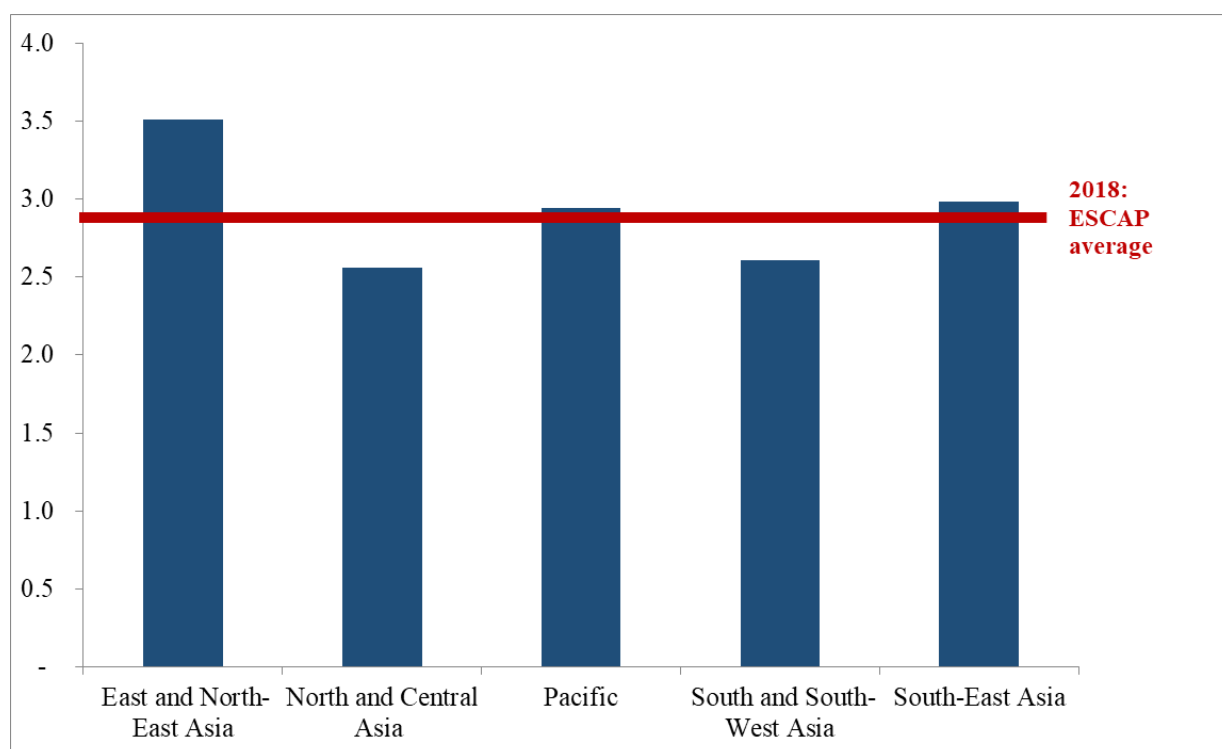
14. The importance of shipping was particularly visible during the pandemic: first, when most (if not all) governments in the region maintained their ports operational even at the height of the pandemic, then when shipping freight rates reached historic highs by the end of 2020/early 2021. While the shortage was precipitated by the disruptions resulting from the pandemic, trade imbalances and changing trade patterns, it was also a reflection of a slowdown and delays in the maritime and global supply chain due to strains caused by the pandemic, such as port labour shortages, port congestions and delays caused by necessary testing or delays by factories in returning containers.²

15. Lastly, there is still ample room for further development of the region's logistics sector, especially in terms of human capacity. According to the latest Logistics Performance Index released by the World Bank in 2018, which ranks countries from 0 to 5 (5 equalling best performance), with regard to the efficiency and effectiveness of the logistics sector, the region scores 2.89 points, just above the world average (2.87) and lower than North America (3.81) and Europe (3.37). Within the region itself, the situation varies substantively among and within subregions. As shown in figure IV, East and

² United Nations Conference on Trade and Development, "Container shipping in times of COVID-19: why freight rates have surged, and implications for policymakers", Briefing Note No. 84, April 2021.

North-East Asia is the leading subregion when it comes to logistics quality, scoring 3.51 points according to the Index. South-East Asia scored 2.98 points, followed by South and South-West Asia (2.61) and North and Central Asia (2.56). The Pacific subregion attained an average of 2.94 points.

Figure IV
Efficiency and effectiveness of the logistics sector in Asia and the Pacific, Logistics Performance Index



Source: World Bank Logistics Performance Index 2018. Available at <https://lpi.worldbank.org/> (accessed on 15 January 2022).

Note: The index ranks countries from 0 to 5, with 5 equalling best performance.

16. Further improvement of the regional transport and logistics sector in Asia and the Pacific rated highly on the agenda of member States prior to the COVID-19 pandemic and formed a significant part of the Regional Action Programme for Sustainable Transport Connectivity in Asia and the Pacific, phase I (2017–2021), adopted by the Third Ministerial Conference on Transport in 2016 and endorsed by the Economic and Social Commission for Asia and the Pacific in its resolution 73/4. The same issues gained further significance during the pandemic itself, providing a much-needed opportunity to re-examine the possible scenarios for freight transport and its externalities in the aftermath of the pandemic.

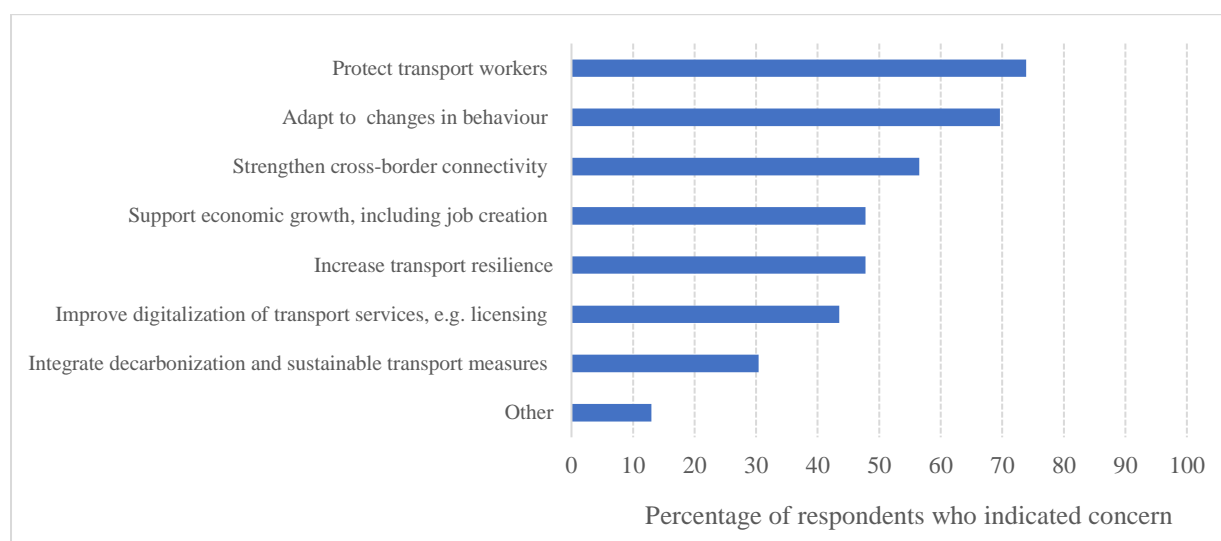
III. Future outlook for freight transport in Asia

17. Early on in the pandemic, when the global and sectoral impact, including on the transport sector, had become apparent, governments in Asia and the Pacific considered the ways in which transport connectivity could be rebuilt and enhanced in line with efforts to build back better. Issues of sustainability, especially its environmental dimension, and of resilience have been flagged as policy objectives for the COVID-19 recovery policies on transport, albeit with a lower priority ranking than concerns related to

economic and business continuity, as can be seen in figure V on policymakers' major concerns in anticipation of the recovery period.

Figure V

Major concerns of freight authorities in Asia with regard to the coronavirus disease (COVID-19) recovery



Source: Survey on freight transport policy responses to COVID-19, conducted in June and July 2020.

18. Some regional initiatives with regard to COVID-19 recovery policies on transport, such as the COVID-19 Recovery Guidelines for Resilient and Sustainable International Road Freight Transport Connectivity in the Association of Southeast Asian Nations (ASEAN), have positioned resilience and decarbonization as priorities.

19. To help member States to consider their transport policy options in the context of the COVID-19 recovery, an analysis of the freight and passenger transport outlook for selected subregions was carried out by the secretariat in 2021–2022 in cooperation with the International Transport Forum as part of the implementation of the United Nations Development Account projects entitled “Transport and trade connectivity in the age of pandemics: contactless, seamless and collaborative United Nations solutions” and “Promoting a shift towards sustainable freight transport in the Asia-Pacific region”. The analysis makes use of the available global transport modelling tools to estimate future demand in passenger mobility, freight volumes and transport-related emissions to 2050 for three subregions, namely South and South-West Asia, North and Central Asia and South-East Asia, selected owing to the ongoing rapid changes in transport demand, services and infrastructure.

20. To estimate future demand, three policy scenarios are considered with a particular focus on possible sustainability gains in terms of decarbonizing freight and transport operations: the recover, reshape and reshape-plus scenarios (see table 2). The recover scenario is the baseline or business-as-usual scenario which assumes that transport trends return to levels seen prior to the pandemic by 2025 and that only pre-existing, currently planned or committed policies are implemented, so there are no additional policies that build on the pandemic experience. Under the reshape scenario, transport trends are again assumed to have returned to their pre-pandemic levels by 2025, but the scenario also assumes policy measures that encourage changes in the behaviour of transport users, uptake of cleaner energy and vehicle

technologies, digitalization to improve transport efficiency, and infrastructure investment to help to meet environmental and social development goals. The reshape-plus scenario is the most ambitious of the three scenarios. It assumes that governments seize decarbonization opportunities created by the pandemic and that any reductions in demand observed during the pandemic broadly continue, with a more ambitious policy package also being implemented.³

Table 2

Examples of measures implemented in the reshape and reshape-plus scenarios

<i>Measures</i>	<i>Description</i>
Economic instruments	
Distance charges	Distance-based charges for road freight
Port fees	Differentiated port fees determined by environmental performance of vessels, i.e. ships with no clean technologies have higher port fees
Enhancement of infrastructure	
Rail and inland waterway improvements	Increase in attractiveness of intermodal solutions, namely trips with a rail or inland waterway component
Transport network improvement plans	Transport network updated with planned new infrastructure and upgrades
Energy transition for long-haul heavy-duty road freight vehicles	Includes a range of solutions to achieve zero emissions for long-haul heavy-duty road vehicles, including electric roads, hydrogen fuel cells, advanced batteries or low carbon fuels
Operations management	
Asset-sharing and the Physical Internet	Sharing assets (e.g. vehicles or warehouses) to make resource management for logistics activities more efficient
Regulatory instruments	
Slow steaming and speed reduction for maritime and trucks	Reduction of the average speed of ships or trucks to reduce emissions
Fuel economy standards for internal combustion engine vehicles and fuel	Increase in fuel efficiency of road freight vehicles
Low-emissions fuel incentives (including electric vehicles) and investment in distribution/supply infrastructure	Increases the share of low-emission-vehicle kilometres travelled (e.g. electric, hydrogen, clean biofuels biogas) in commercial vehicle fleets, lowering the average carbon intensity of road freight

³ Detailed description of all three scenarios is available in International Transport Forum's Transport Outlook 2021, (Organisation for Economic Co-operation and Development /International Transport Forum, 2021, p.184–186).

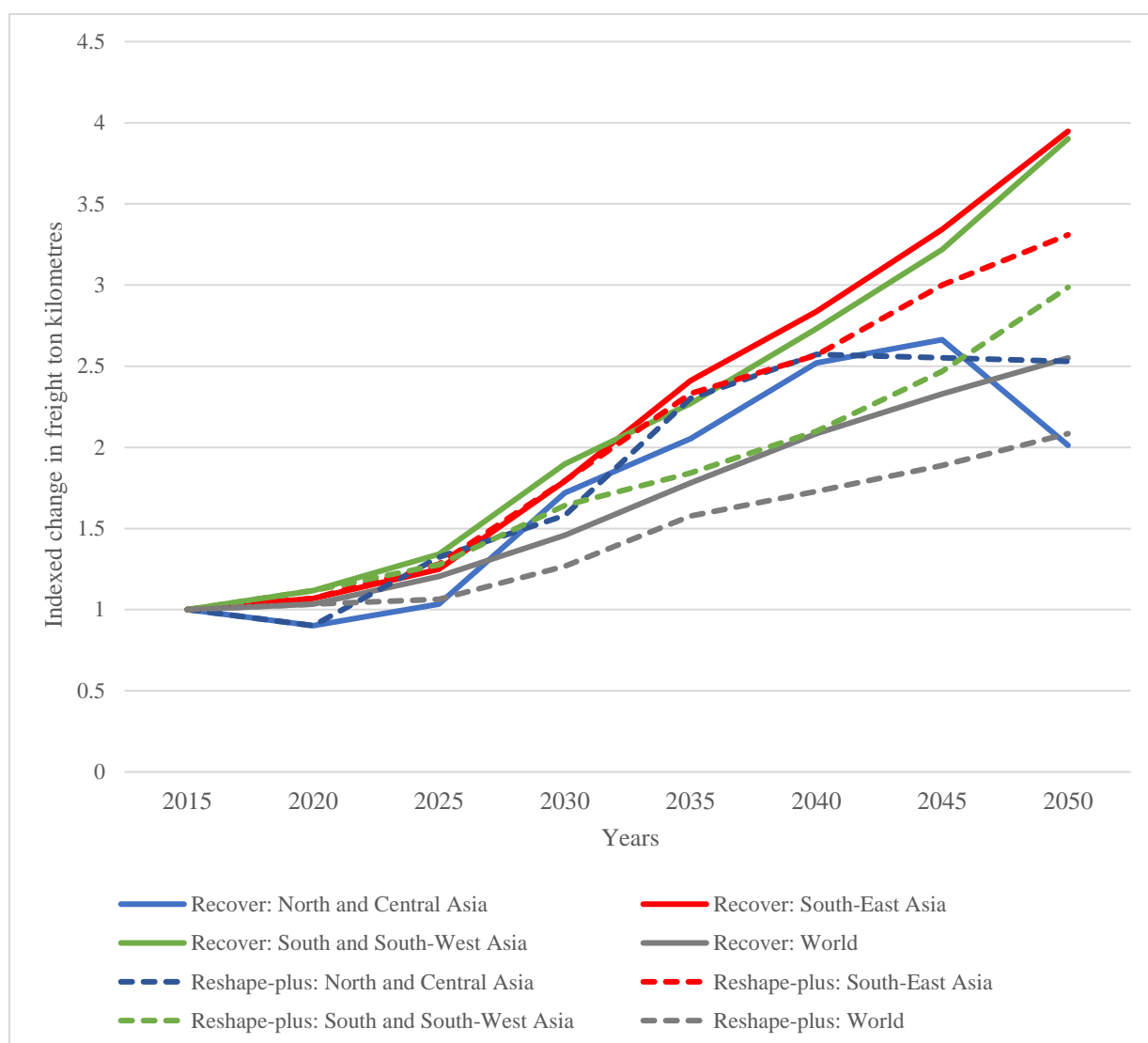
<i>Measures</i>	<i>Description</i>
Heavy capacity vehicles	Road vehicles that exceed the general weight and dimension limitations set by national regulations; truck loads increase 50 per cent and costs fall 20 per cent per ton-kilometre where heavy capacity vehicles are adopted
Stimulation of innovation and development	
Autonomous vehicles and platooning	Stimulates the adoption of autonomous trucks (platooning and full autonomy) in road freight; reduces not only road freight but also its carbon dioxide emission intensity; on the other hand, it can induce demand and reverse modal shift
Electric/alternative fuel vehicle penetration and increases in efficiency for all transport modes	Electric/alternative fuel vehicle penetration and increases in efficiency for all transport modes (including average loads and vehicle capacity)
Intelligent transport systems and eco-driving	Development of intelligent transport systems to provide better quality, real-time, automatic data collection and processing to improve fleet management, routing and assist driving.

Source: Adapted from “International Transport Forum (ITF) transport outlooks for North and Central Asia, South-East Asia and South and South-West Asia” (forthcoming).

21. Initial observations from the analysis indicate a very substantial growth in freight transport demand over the coming decades in all three subregions. While urban and non-urban freight activity is expected to grow in the upcoming decades around the globe, its growth is particularly striking in Asia. In fact, freight in the South-East Asia subregion is expected to be one of the fastest growing in the world.

22. As can be seen in figure VI, in South-East Asia, ton-kilometres are projected to increase by nearly 80 per cent between 2015 and 2030, and the 2015 baseline value is projected to have nearly quadrupled (factor of 3.9) by 2050 under all three scenarios. In South and South-West Asia, if the current trajectory continues, the total demand for non-urban freight transport is expected to increase by a factor of almost 4 between 2015 and 2050. Under the reshape and reshape-plus scenarios, the total increase comes to a factor of 3.1 and 2.8 respectively. In North and Central Asia, by 2050, freight activity under all three scenarios is projected to more than double compared to 2015 values.

Figure VI
Relative change in freight activity in Asia and the world



Source: Adapted from “International Transport Forum (ITF) transport outlooks” (see table 2).

Note: The volume of freight activity in ton kilometres in 2015 is assumed to be 1. The graph shows the relative change between 2015 and 2050 for three scenarios (recover, reshape, reshape plus).

23. In short, the pandemic is not expected to reverse or stop the projected freight growth in Asia, and the strain on the existing infrastructure and transport and logistics services will continue to grow. Infrastructure and operational connectivity along the regional transport and logistics networks in Asia and the Pacific will remain key parameters of supply chain performance globally and regionally and, without proper prioritization, will effectively become a bottleneck in supply chain operations.

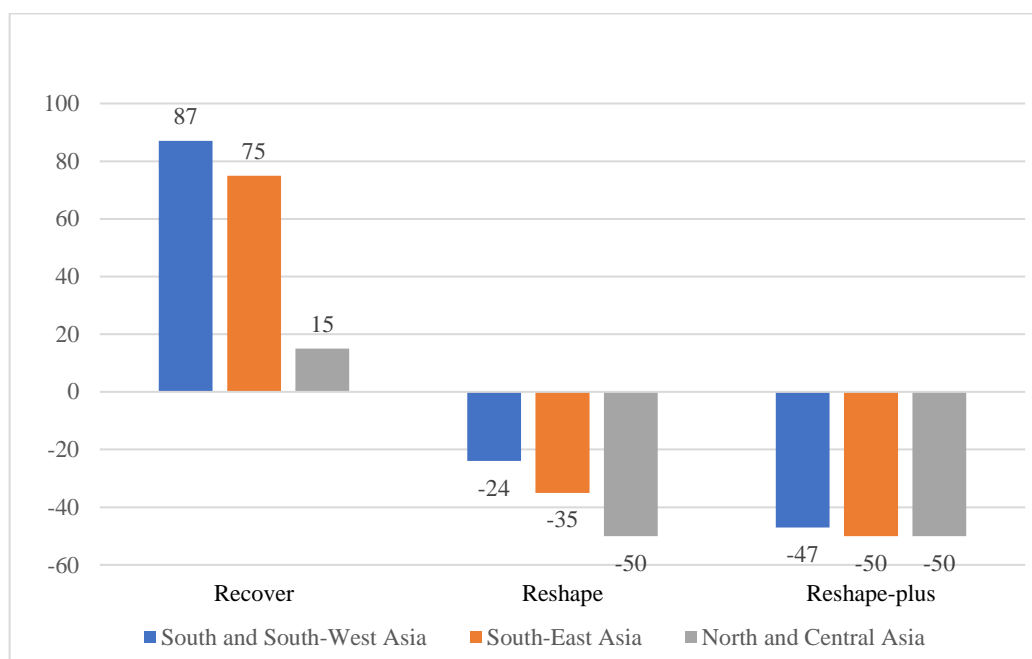
24. An additional observation from the analysis relates to the importance of multimodality. Even if road and maritime transport continue to account for the bulk of the regional freight flows, other modes of transport will become increasingly important to satisfy the demand for freight.

25. Rail transport, in particular, is expected to accommodate higher and higher volumes of freight. In South and South-West Asia, comparing the recover and the reshape-plus scenarios in 2050, the total demand for air, sea, inland and road transport decreases, while the demand for rail transport increases. Rail transport, which accounted for 7 per cent of non-urban freight activity in 2015, will capture 12 per cent in the recover scenario, 15 per cent in the reshape scenario and 19 per cent in the reshape-plus scenario by 2050. In South-East Asia, ton-kilometres by rail increase by a factor of 3.5 between 2015 and 2050. Under the reshape and reshape-plus scenarios, ton-kilometres increase by a factor of 3.9 and 5.3 respectively.

26. The results also point to the importance of access to maritime shipping for all countries and, particularly, the landlocked developing countries in North and Central Asia. Sea freight, which still accounted for 26 per cent of inter-urban freight in North and Central Asia before the pandemic, fell to 10 per cent during the pandemic. As the region's international trade increases, a significant part of this trade will likely be maritime. Under the recover scenario, maritime freight in North and Central Asia is projected to account for 42 per cent of freight activity by 2030, before settling at 34 per cent by 2050. Under the reshape and reshape-plus scenarios, the maritime share is projected to be above 45 per cent by 2030 and to reach nearly 60 per cent by 2050. In other words, access to seaports and efficient transit systems are prerequisites for inclusive growth in the region, allowing landlocked developing countries to fully partake in the growing regional and global trade.

27. Lastly, the results of the analysis, summarized in figure VII, show that under the recover scenario, all subregions will experience a drastic increase in carbon dioxide emissions, but substantive savings could be achieved if action is taken in both the reshape and reshape-plus scenarios. In South and South-West Asia, the emissions from the non-urban freight sector are projected to increase by 87 per cent in 2050 under the recover scenario but to decline from 2015 levels by 24 per cent in the reshape scenario and by 47 per cent in the reshape-plus scenario. In South-East Asia, under the recover scenario, the significant growth in ton-kilometres has a corresponding impact on the emissions associated with non-urban freight, with emissions increasing by more than 75 per cent between 2015 and 2050. Under the reshape scenario, emissions rise between 2015 and 2035, but fall thereafter, ending at 35 per cent below 2015 levels by 2050. Under a more ambitious reshape-plus scenario, emissions begin to fall sooner, peaking in 2025 and reaching a reduction of 50 per cent by 2050 compared to 2015 levels. In North and Central Asia, without significant changes in the coming decades, non-urban transport emissions will increase in line with demand. It is projected that under the recover scenario, total non-urban emissions will more than double by 2050. Despite having similar levels of demand to the recover scenario, the reshape and reshape-plus scenarios would see emissions fall below the 2015 baseline and the 2020 levels by 2050.

Figure VII
Estimated change in non-urban freight carbon dioxide emissions between 2015 and 2050, by scenario
 (Percentage)



Source: Adapted from “International Transport Forum (ITF) transport outlooks” (see table 2).

28. It is therefore possible and desirable, for reasons of efficiency and resilience as well, to decouple the growing need for freight operations from a further increase in carbon dioxide emissions.

29. If the transport sector in the region is to reduce its emissions, it will be essential to scale up decarbonization efforts for the road freight sector. Several solutions already exist that can be applied to advance emissions reductions from the sector, and the COVID-19 pandemic presents an opportunity to accelerate the transition towards decarbonized freight. Recovery programmes should prioritize decarbonized transport infrastructure and the production, distribution and supply of alternative fuels.

IV. Pathways towards efficient and resilient transport and logistics networks in support of supply chain connectivity

30. As discussed in the previous sections, efficiency and resiliency of transport operations remain central to sustainable transport development, which must offer a balance of economic growth, social equity and environmental protection. Efficiency is often positively correlated with sustainability; this was especially relevant during and after the COVID-19 pandemic as the transport sector was mobilized to maintain the movement of freight for continuous economic benefits while also protecting the health and safety of transport workers and manage the environmental impact of transport connectivity activities.

31. This approach and lessons learned are reflected in the new Regional Action Programme for Sustainable Transport Development in Asia and the Pacific (2022–2026), adopted by the Fourth Ministerial Conference on Transport. The Regional Action Programme establishes progress towards

efficient and resilient transport and logistics networks and mobility for economic growth as one of three overarching objectives. All seven thematic areas of the Regional Action Programme are expected to contribute – directly or indirectly – to that objective, as well as the two other overarching objectives, namely progress towards environmentally sustainable transport systems and services, and progress towards safe and socially inclusive transport and mobility. Thus, the Regional Action Programme is designed to maximize synergies between actions in the seven thematic areas, all geared towards the three objectives (see table 3).

Table 3

Matrix of the Regional Action Programme for Sustainable Transport Development in Asia and the Pacific (2022–2026)

	Overarching objectives		
	Towards efficient and resilient transport and logistics networks and mobility for economic growth	Towards environmentally sustainable transport systems and services	Towards safe and inclusive transport and mobility
	Relevant Sustainable Development Goals		
	1, 2, 9, 10, 11, 13	7, 9, 11, 13, 14	1, 2, 3, 5, 8, 10, 11, 13
Thematic areas	Classification of contribution		
Regional land transport connectivity and logistics	Direct impact	Direct impact	Direct impact
Maritime and interregional transport connectivity	Direct impact	Direct impact	Direct impact
Digitalization of transport	Direct impact	Direct impact	Direct impact
Low carbon mobility and logistics	Direct impact	Direct impact	Indirect impact
Urban transport	Direct impact	Direct impact	Direct impact
Road safety	Indirect impact	Indirect impact	Direct impact
Inclusive transport and mobility	Indirect impact	Direct impact	Direct impact

Source: ESCAP/MCT/2021/5/Add.2.

32. Table 4 lists the most relevant activities under the new Regional Action Programme that should have a significant positive impact on the efficiency and resilience of supply chains in Asia and the Pacific.

Table 4
**Regional Action Programme on Sustainable Transport Development
(2022–2026) and supply chain connectivity**

<i>Area</i>	<i>Activities</i>
Regional land transport connectivity and logistics	<p>2.1 Work towards the greater efficiency, sustainability and resilience of the regional land transport network, as formalized by the Intergovernmental Agreements on the Asian Highway Network, the Trans-Asian Railway Network and Dry Ports.</p> <p>2.2 Help to advance the efficiency, sustainability and resilience of land and multimodal transport corridors in the region.</p> <p>2.3 Contribute to enhancing the accessibility of the regional transport network with particular attention to the connectivity gaps adversely affecting landlocked developing countries and other countries with special needs.</p> <p>2.4 Assist in improving the quality and inclusiveness of logistics services and overall competitiveness of the region's logistic competencies.</p>
Maritime and interregional transport connectivity	<p>2.1 Support a systematic regional dialogue on sustainable and resilient maritime connectivity.</p> <p>2.2 Assist small island developing States in meeting transport challenges and strengthening resilience to future shocks.</p> <p>2.3 Support an interregional multi-stakeholder forum for sustainable and resilient transport connectivity between Europe and Asia.</p>
Digitalization of transport	<p>2.6 Promote new technologies, digitalization, smart transport solutions and electronic information exchange that respect data privacy and data protection to promote a shift towards smart transport networks.</p> <p>2.7 Enhance the application of new technologies and digitalization to streamline port activities.</p> <p>2.8 Increase the resilience, sustainability and interconnection of maritime transport systems.</p> <p>2.9 Increase awareness among members and associate members of the Commission about autonomous navigation implementation.</p>
Low carbon mobility and logistics	<p>2.6 Contribute to decarbonizing global and regional supply chains, by:</p> <ul style="list-style-type: none"> (a) Building technical capacities on environmentally sustainable freight, including on green multimodal freight corridors; (b) Carrying out national and regional assessments on current and optimal target modal splits for multimodal freight transport; (c) Incentivizing decarbonization efforts as part of the national and regional sustainable freight programmes and initiatives; (d) Developing metrics and methodologies to assess the efficacy of economic, land-use and other measures with regard to environmentally sustainable freight; (e) Establishing a conducive policy environment for a transition to fuel efficient and green vehicle/locomotive/shipping technologies for freight transport; (f) Sharing best practices for the greening and decarbonization of the shipping value chain, including deploying green port infrastructure. <p>2.7 Scale up capacity-building programmes to facilitate the implementation of international best practices in support of sustainable maritime connectivity.</p> <p>2.8 Promote more-efficient logistics hubs to provide carbon abatements that substantially outweigh the additional freight emissions.</p>

Source: ESCAP/MCT/2021/5/Add.2.

33. As table 4 demonstrates, supporting further connectivity development in the region will require a wide range of analytical, intergovernmental and capacity-building activities across several thematic areas.

34. In the area of land transport connectivity and logistics, enhancing the resilience and efficiency of transport operations will be led by mobilizing the existing intergovernmental platforms. More specifically, the Working Group on the Asian Highway, the Working Group on the Trans-Asian Railway Network and the Working Group on Dry Ports will continue steering regional infrastructure development, covering infrastructure and operationalization issues that maximize the efficiency and value added of the infrastructure defined in the three Intergovernmental Agreements, in line with the expected growth of regional freight volumes, which requires balancing infrastructure connectivity issues against the agility of border-crossing freight operations.

35. The latest discussions of the Working Group on the Asian Highway confirm that cross-border and transit road transport in Asia and the Pacific face considerable operational challenges due to numerous non-physical barriers;⁴ they include restrictions on traffic rights, lack of harmonized standards for freight vehicles and insufficient use of new technologies. Likewise, international border-crossing operations have been recognized by the Working Group on the Trans-Asian Railway Network as one of the main factors affecting the efficiency and competitiveness of rail transport.⁵ In turn, the Working Group on Dry Ports underscored the increasing need for continued efforts to enhance the efficiency of transport corridors involving dry ports and to prioritize concrete measures in that regard.⁶

36. Promoting and facilitating multimodal transport is an important piece of this work. Efforts on developing a conceptual framework for the harmonization of rules and practices pertaining to the relationship between the carriers of different modes of transport involved in multimodal transport chains will continue.⁷

37. Maritime connectivity plays an essential role in supporting the resilience and efficiency of transport, given the dominance of shipping in global freight transport. Further progress in this area is contingent on strengthening the institutional mechanisms to support a regular exchange on best practices and experiences in sustainable maritime connectivity for Asia and the Pacific, as mandated by the Commission in its resolution 76/1 on strengthening cooperation to promote the conservation and sustainable use of the oceans, seas and marine resources. In that regard, it will be critical to address the issues of small island developing States, promote regional cooperation to assist them in meeting their transport challenges, and strengthen their resilience to future shocks.

38. The use of new technologies and digitalization in regional connectivity has brought significant benefits in terms of increasing the efficiency and resilience of supply chains. Digitalization trends, already well on their way in

⁴ See the report of the Working Group on the Asian Highway on its 9th meeting (ESCAP/AHWG/2021/4, para. 4).

⁵ See the report of the Working Group on the Trans-Asian Railway Network on its 7th meeting (ESCAP/TARN/WG/2021/3, para. 11).

⁶ See the report of the Working Group on Dry Ports on its 4th meeting (ESCAP/DP/WG/2021/4, para. 11).

⁷ Ibid., para. 16.

the transport sector, have received a tremendous momentum boost during the pandemic and will require continued support from Governments.

39. Accordingly, at its most recent session, the Working Group on the Asian Highway issued a call to leverage digitalization and smart transport solutions to achieve seamless and sustainable transport connectivity in Asia and the Pacific. In its consideration, the use of new technologies, including logistics information systems and automation technologies, would allow for more streamlined mechanisms to ensure the faster, more efficient and safer movement of goods and services along the supply chain network. The Working Group encouraged member States to support the secretariat's project by integrating new technologies into the transport sector and requested the secretariat to report on the results of the project at the 10th meeting of the Working Group.⁸

40. Similarly, the Working Group on the Trans-Asian Railway Network supported the initiative to develop a regional strategy/framework to deepen digitalization among the railways of the region, especially for the benefit of the landlocked developing countries and least developed countries, and requested the secretariat to finalize the strategy or framework for further consideration by the Working Group. It also agreed with the proposal by the Government of the Islamic Republic of Iran to consider the addition of a new annex to the Intergovernmental Agreement on the Trans-Asian Railway Network on general principles on electronic information exchange/data interchange among railways and between railways and control agencies along the Trans-Asian Railway network.⁹

41. The Working Group on Dry Ports also took note of the growing importance of contactless solutions, especially in the context of the COVID-19 pandemic, and emphasized that the rapid deployment and implementation of ICT at dry ports was imperative to ensure their competitiveness in the transport service market and to build resilience to the current pandemic and future potential disruptions. The Working Group asked the secretariat to reflect those issues in its capacity-building work on dry ports to support the ongoing digital transformation of the transport sector and the COVID-19 pandemic response and recovery.¹⁰

42. Lastly, ensuring efficiency and resilience of transport and logistics operations goes hand in hand with the region's ambitions in terms of low carbon mobility and logistics. Here again, the existing institutional frameworks can be used to increase the capacity of relevant stakeholders to design and implement national and regional measures to decarbonize transport operations along the Asian Highway network, the Trans-Asian Railway network and the network of dry ports of international importance. The above-mentioned regional dialogue on sustainable and resilient maritime connectivity (see table 4) would also aim to increase the capacity of relevant stakeholders to implement global regulations and instruments to enhance the environmental sustainability and resilience of maritime transport.

43. Future outlooks and projections clearly underscore the need for more ambitious policies to foster sustainable freight transport in the region. However, owing to the involvement of multiple stakeholders, often with conflicting priorities, the ambitions to deepen sustainability in freight transport

⁸ See ESCAP/AHWG/2021/4, para. 8.

⁹ See ESCAP/TARN/WG/2021/3, paras. 6 and 14.

¹⁰ See ESCAP/DP/WG/2021/4, para. 6.

confront formidable challenges. Concerted efforts by the member States, duly supported by development partners, are therefore needed. A significant step to address the related challenges has been taken by the member States with the adoption of the Ministerial Declaration on Sustainable Transport Development in Asia and the Pacific, in which the Ministers encouraged implementation of a regional approach on sustainable multimodal freight transport which provides coherence to the existing initiatives, creates synergies through partnerships and ensures high-level political affirmation with regard to sustainable multimodal freight transport.¹¹ The secretariat is now working to leverage this high-level affirmation to support development of subregional/national strategies on sustainable freight transport.

V. Issues for consideration by the Commission

44. The Commission may wish to exchange views on the issues discussed in the present document and consider taking the following actions:

(a) Provide guidance to the secretariat on scaling up activities for an efficient and resilient transport and logistics network in support of sustainable supply chain connectivity and in line with the Regional Action Programme (2022–2026);

(b) Provide additional guidance on the effective implementation of the relevant activities of the Regional Action Programme as highlighted in the present document.

¹¹ ESCAP/MCT/2021/5/Add.1.