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Major issues in transport

Transport connectivity for least developed countries, landlocked developing countries and small island developing States

Note by the secretariat

Summary

There remain many transport challenges for least developed countries, landlocked developing countries and small island developing States. The issues can be varied, including lack of investment in transport infrastructure and services, or challenging geography that adds dramatically to development restrictions. A major issue for landlocked developing countries is the lack of economical and efficient access to the sea, and for remote small island developing States, the burdening cost of shipping.

The present document outlines the special needs of least developed countries, landlocked developing countries and small island developing States with respect to transport and suggests a set of priority areas: (a) facilitating transport and integrated intermodal transport and logistics for least developed countries and landlocked developing countries; (b) improving urban and rural transport and road safety in least developed countries, landlocked developing countries and small island developing States; and (c) enhancing maritime connectivity for small island developing States. It advocates for the provision of technical assistance to landlocked developing countries and neighbouring transit developing countries in planning, establishing and operating efficient integrated multimodal transport corridors. The document also recommends a report on the midterm review of the implementation of the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024, together with capacity-building to enhance transport connectivity, develop urban and rural transport and improve road safety.

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I. Introduction

1. Geography is an important factor affecting the balanced socioeconomic development of the region, in which there are 12 landlocked developing countries and 17 small island developing States.
2. Being geographically remote from ports or away from the main commercial shipping lanes makes the ability to access global markets a critical issue that needs to be addressed if the socioeconomic progress that the region as a whole has recorded in the past 30 years is to be extended to least developed countries, landlocked developing countries and small island developing States.
3. Currently, transport connectivity remains an impediment to competitiveness for these countries, where the business community faces trade costs that are much higher than in the more developed economies of the region.
4. Recognizing the particular challenges faced by these countries, a number of programmes have been launched to identify problems and work out possible solutions.
5. The Programme of Action for the Least Developed Countries for the Decade 2011-2020, adopted in 2011, aimed to graduate half of the least developed countries by 2020. In the Asia-Pacific region, there were 13 least developed countries when the Programme of Action was adopted, six of which need to meet the conditions for graduation by 2020.
6. Between 1991 and 2014, Maldives and Samoa were the only two countries in the Economic and Social Commission for Asia and the Pacific (ESCAP) region to have successfully graduated from the status of least developed country. The remaining least developed countries – Afghanistan, Bangladesh, Bhutan, Cambodia, Timor-Leste, the Lao People's Democratic Republic, Myanmar, Nepal, Kiribati, Solomon Islands, Tuvalu and Vanuatu – continue to seek graduation from this status. The proportion of the population of these countries living on less than two dollars a day is 38.8 per cent, twice that of their developing-country counterparts.
7. The Programme of Action prioritizes sufficient and appropriate physical infrastructure in transport and institutional capacity. Reliable and affordable infrastructure and services are essential for the efficient operation of existing productive assets and enterprises in least developed countries, attracting new investment, connecting producers to markets, assuring meaningful economic development and promoting regional integration. When designed from a regional perspective, infrastructure development could contribute to regional connectivity and integration.
8. Actions listed in the Programme of Action include developing and implementing comprehensive national policies and plans for infrastructure development and maintenance encompassing all modes of transport and promoting bilateral, subregional and regional approaches to improve connectivity by removing infrastructure bottlenecks.
9. Critical areas for investment and improvement are urban mobility and rural connectivity and tackling the growing burden of road crashes through improved road safety.

10. For landlocked developing countries, access to international seaports is the most important constraint. The nearest seaport is often several thousands of kilometres away in a neighbouring country, and reaching that port often entails transit through at least a third country. Past surveys of business executives in landlocked developing countries show that many of them perceive access to ports to be a major problem. It is estimated that the level of development in landlocked developing countries is, on average, 20 per cent lower than it would be were they not landlocked. They pay trade costs that are more than twice that of the transit countries, limiting their participation in global trade: landlocked developing countries' share of global exports was estimated to have been less than 1 per cent in 2015.

11. To address the specific challenges faced by landlocked developing countries, the second United Nations Conference on Landlocked Developing Countries, held in Vienna in November 2014, adopted the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024 as a continuation of the Almaty Programme of Action: Addressing the Special Needs of Landlocked Developing Countries within a New Global Framework for Transit Transport Cooperation for Landlocked and Transit Developing Countries, which had been adopted in Almaty, Kazakhstan, in 2003. Among its specific goals and objectives, the Vienna Programme of Action seeks to promote unfettered, efficient and cost-effective access to and from the sea by all means of transport; develop adequate transit transport infrastructure networks and complete missing links connecting landlocked developing countries; and effectively implement bilateral, regional and international legal instruments and strengthen regional integration.

12. The SIDS Accelerated Modalities of Action (SAMOA) Pathway, adopted in 2014, articulates the development agenda for small island developing States around six broad sets of issues, namely: (a) sustainable economic development; (b) climate change and disaster risk management; (c) social development; (d) sustainable energy; (e) oceans, seas and biodiversity; and (f) water and sanitation, food security and waste management. In the area of transport, the secretariat cooperates with the Secretariat of the Pacific Community and the Pacific Islands Forum Secretariat, which implement extensive programmes to support the development of inter-island shipping.

II. Status of and challenges in developing transport connectivity for least developed countries, landlocked developing countries and small island developing States

A. Transport facilitation, integrated intermodal transport and logistics

13. Landlocked developing countries have made undeniable efforts to improve the quality of their transport infrastructure and services. Under various bilateral, multilateral and self-funded arrangements, they have also consented to investment to increase land transport connectivity with their neighbouring countries through the continued development or modernization of their road and rail networks.

14. However, according to the World Economic Forum, infrastructure ratings in landlocked developing countries remain below the world's mean value. While substantial progress has been made in the development and upgrading of the Asian Highway network in landlocked developing countries,

55 per cent of the network in these countries is still at the standard of class III (38 per cent) or below class III (17 per cent). The result is higher than normal vehicle operating costs, which often deter road transport operators from running international services. A particular concern is that many of the Asian Highway sections below the minimum standard of class III are also those that connect with neighbouring countries. In addition, low-quality roads are often the most dangerous and the high number of crashes that occur along them have a punitive economic impact that landlocked developing countries can ill afford. The World Health Organization (WHO) estimates that the cost of road injuries in low- and middle-income countries runs to an estimated \$100 billion.

15. Furthermore, the low rating for rail infrastructure is of particular concern given that the large distances between landlocked developing countries and the region's main seaports should provide full economic justification for the rail mode, especially since a number of landlocked developing countries are major exporters of mineral resources and rail transport plays a crucial role in their logistics. In general, the efficiency of rail transport in landlocked developing countries is hampered by one or several of the following factors: (a) the existence of different technical standards on each side of a border; (b) lack of capacity in rolling stock; or (c) insufficient availability of infrastructure.

16. These problems result in an overall lack of confidence among logistics professionals. According to the 2016 Logistics Performance Index, a World Bank survey of logistics professionals (see table 1), while they recognize that the quality of trade- and transport-related infrastructure (airports, ports, railways, roads, warehousing and transloading facilities and information technology) has shown relative improvement in landlocked developing countries since the World Bank started to monitor on-the-ground efficiency of trade supply chains, landlocked developing countries continue to rank relatively low in international comparison for infrastructure, with only two in the region (Kazakhstan and Uzbekistan) being in the top 100. The survey participants marked the quality of infrastructure around 2 (low) and 3 (average) while the maximum grade is 5 (very high).

Table 1
**Scores and ranking of infrastructure components of the Logistics
 Performance Index**

	2007	2010	2012	2014	2016	<i>Infrastructure ranking, 2016</i>
Afghanistan	1.10	1.87	2.00	1.82	1.84	154
Armenia	1.78	2.32	2.38	2.38	2.22	122
Azerbaijan	2.00	2.23	2.42	2.71	-	-
Bhutan	1.95	1.83	2.29	2.18	1.96	151
Kazakhstan	1.86	2.66	2.60	2.38	2.76	65
Kyrgyzstan	2.06	2.09	2.49	2.05	1.96	150
Lao People's Democratic Republic	2.00	1.95	2.40	2.21	1.76	155
Mongolia	1.92	1.94	2.22	2.29	2.05	140
Nepal	1.77	1.80	1.87	2.26	2.27	112
Tajikistan	2.00	2.00	2.03	2.36	2.13	130
Turkmenistan	-	2.24	-	2.06	2.34	103
Uzbekistan	2.00	2.54	2.25	2.01	2.45	91

Source: World Bank, Logistics Performance Index Global Rankings. Available from <http://lpi.worldbank.org/international/global>.

17. Similarly, landlocked developing countries also perform quite weakly in elements related to transport facilitation such as customs efficiency, logistics services quality and professionalism, timeliness of shipments and the availability of cargo tracking systems. In 2016, Kazakhstan was the only landlocked developing country ranked in the top 100 across all five components (see table 2).

Table 2
**Scores and ranking of components related to transport facilitation of the
 Logistics Performance Index, 2016**

<i>Country</i>	<i>Customs</i>		<i>International shipments</i>		<i>Logistics quality and competence</i>		<i>Tracking and tracing</i>		<i>Timeliness</i>	
	<i>Score</i>	<i>Rank</i>	<i>Score</i>	<i>Rank</i>	<i>Score</i>	<i>Rank</i>	<i>Score</i>	<i>Rank</i>	<i>Score</i>	<i>Rank</i>
Afghanistan	2.01	138	2.38	125	2.15	139	1.77	155	2.61	137
Armenia	1.95	148	2.22	146	2.21	137	2.02	147	2.60	139
Bhutan	2.21	128	2.50	108	2.30	131	2.20	131	2.70	129
Kazakhstan	2.52	86	2.75	82	2.57	92	2.86	71	3.06	92
Kyrgyzstan	1.80	156	2.10	152	1.96	151	2.39	115	2.72	126
Lao People's Democratic Republic	1.85	155	2.18	148	2.10	144	1.76	156	2.68	133
Mongolia	2.39	100	2.37	129	2.31	129	2.47	108	3.40	65
Nepal	1.93	149	2.50	109	2.13	140	2.47	109	2.93	104
Tajikistan	1.93	150	2.12	151	2.12	143	2.04	144	2.04	159
Turkmenistan	2.00	143	2.37	127	2.09	145	1.84	154	2.59	142
Uzbekistan	2.32	114	2.36	130	2.39	116	2.05	143	2.83	114

Source: World Bank, Logistics Performance Index Global Rankings. Available from <http://lpi.worldbank.org/international/global>.

18. This somewhat disappointing picture should not, however, lead to an underestimation of the higher level of awareness in landlocked developing countries and the initiatives that they are taking to connect with their neighbours.

19. These initiatives fall within the framework either of multilateral agreements between Governments or of regional or subregional organizations. All the efforts recognize that bridging infrastructure gaps in landlocked developing countries remains a complex and expensive medium-to long-term challenge and one that continues to require a strong political commitment and the involvement of a range of multisectoral public and private stakeholders.

20. Studies also show that there exists tremendous potential for a greater utilization of regional transport networks through the development of intermodal facilities, such as dry ports, and greater integration of modes to create the necessary connectivity for landlocked developing countries. The current efforts need to be augmented by investing in (a) more and better transport infrastructure and services, particularly along international intermodal transport corridors; (b) the development of cross-border and transit transport facilitation; (c) the establishment of an enabling environment for the advent of efficient logistics; and (d) the development and deployment of new technologies such as intelligent transport systems to smooth the operationalization of transport infrastructure networks.

B. Maritime infrastructure and services in Pacific small island developing States

21. Small island developing States, meanwhile, face unique challenges in their pursuit of economic development and their efforts to reduce poverty. These challenges include their small size, remoteness from major markets, limited resource and export base, and exposure to global environmental challenges and external economic shocks. With their very small populations, they face special limitations in terms of the number and type of economic activities that are economically viable, a situation which is reflected in limited employment opportunities and the few productive jobs available. The studies that have looked at the challenges faced by Pacific small island developing States have identified the root causes shown in figure I.

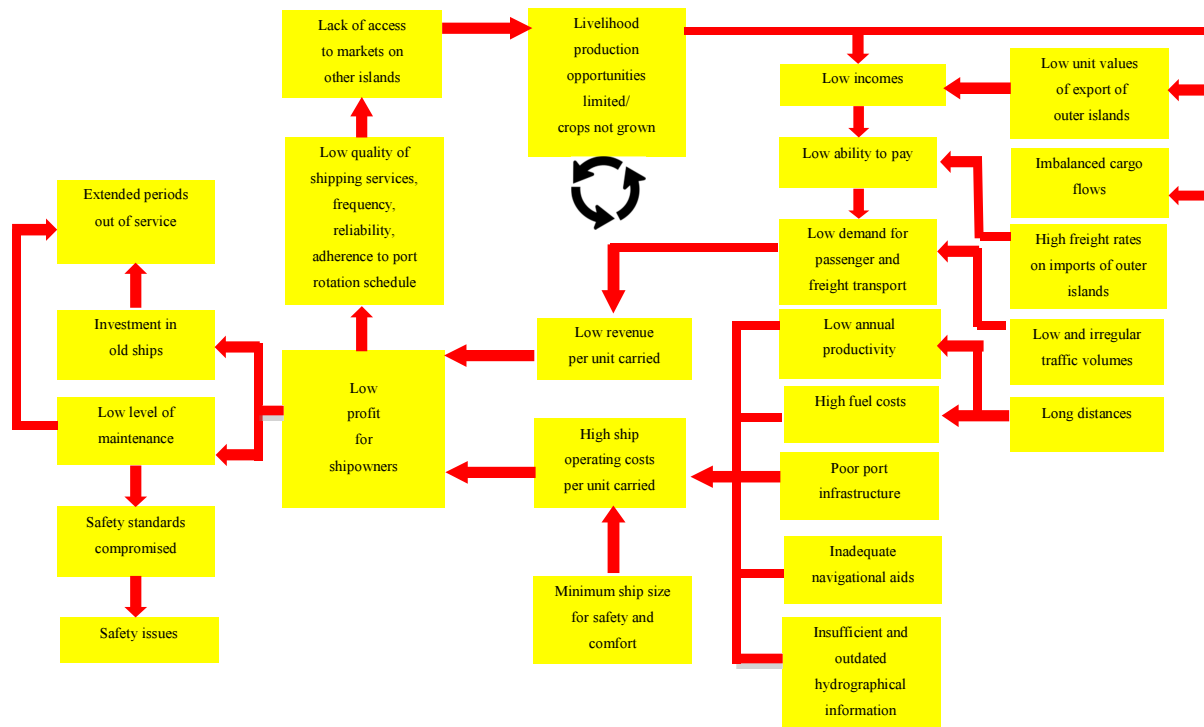
Figure I
Challenges faced by Pacific small island developing States

Key challenge	Lack of safe, efficient, reliable and affordable transport infrastructure and services
Reasons on surface	Poor port facilities, ageing fleets, inability to attract seafarers and qualified shipping management staff, low productivity, poor service quality (frequency and reliability) or unavailability of services, compromised safety standards
Further reasons	Difficulties in securing financing, low levels of investment, inadequate maintenance
Reasons under surface	Low and often irregular traffic volumes, long voyage distances, imbalanced cargo flows, low unit values of exports
Root reasons	Small scale of economy, remoteness

Source: Transport Division, ESCAP.

22. Meanwhile, the cycle of challenges hindering inter-island shipping in the Pacific are summarized in figure II.

Figure II
Cycle of challenges hindering inter-island shipping in the Pacific



Source: ESCAP, *Review of Developments in Transport in Asia and the Pacific: 2013* (Bangkok, 2013), p. 111. Available from www.unescap.org/resources/review-developments-transport-asia-and-pacific-2013.

23. In its *Review of Maritime Transport 2015*, the United Nations Conference on Trade and Development (UNCTAD) estimated that the volume of world seaborne shipments reached 9.84 billion tons, or around four fifths (80 per cent) of total world merchandise trade.¹ This figure shows the prevalence of maritime transport in the economic life of countries and underscores the fact that countries that have limited access to shipping services may face stunted economic growth.

24. This is particularly the case for Pacific small island developing States, which face three challenges arising from their geographic locations. The first challenge results from their geographic isolation from global markets. The second challenge arises from their being located in an area particularly exposed to natural disasters. It is estimated that an average of ten tropical cyclones sweep through the south-west Pacific Ocean between November and April each year, and several Pacific small island developing States sit atop the tectonic-plate boundaries known as the “Ring of Fire”, where most of the world’s largest earthquakes occur. All of these events have a destructive impact on infrastructure, as evidenced by the damage caused when Tropical Cyclone Pam hit Vanuatu in March 2015. Lastly, the third challenge is due to their location away from the main East-West shipping route, which carries 85 per cent of global container flows and circumnavigates the planet without entering the southern hemisphere.²

¹ See *Review of Maritime Transport 2015* (United Nations publication, Sales No. E.15.II.D.6).

² See *Review of Maritime Transport 2014* (United Nations publication, Sales No. E.14.II.D.5).

25. Recognizing these challenges, the Commission at its seventieth session adopted resolution 70/7 on the implementation of the Suva Declaration on Improving Maritime Transport and Related Services in the Pacific. The Declaration stresses that maritime transport and related services in the Pacific are public policy issues of major concern that require strong political commitment and effective interventions. This commitment was reinforced at the seventy-second session of the Commission, when it adopted resolution 72/5 on strengthening regional cooperation on transport connectivity for sustainable development in Asia and the Pacific, recognizing the need to connect the economies of small island developing States to the network of regional and global supply chains by integrating them into existing and emerging intermodal transport corridors.

26. The above challenges combine with the limited export capabilities of Pacific small island developing States to exacerbate the absence of direct shipping services, which is a component of the Liner Shipping Connectivity Index used by UNCTAD to measure a country's participation in global trade. The 2016 index figures reveal that Pacific small island developing States are among the least connected of the 162 coastal or archipelagic countries covered by the index.³

27. In addition to the above, the UNCTAD analysis of the index over the period from 2004 (when the index was used for the first time) to 2016 shows that, while the global index average increased by 50 per cent, the figures for Pacific small island developing States remained largely stagnant with the exception of Solomon Islands and Vanuatu. Table 3 shows the evolution of the index for selected countries of the region using a maximum base value of 100 for 2004.

³ United Nations Conference on Trade and Development, Liner shipping connectivity index, annual, 2004-2016, UNCTADstat. Available from <http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=92>.

Table 3
Liner Shipping Connectivity Index for Pacific small island developing States and developing economies of the region

	2005	2010	2016
<i>Pacific island countries</i>			
Fiji	8.32	9.44	8.56
Kiribati	3.28	2.86	2.91
Marshall Islands	3.68	2.83	3.02
Micronesia (Federated States of)	2.87	3.43	1.32
Palau	1.04	3.43	1.32
Papua New Guinea	6.4	6.38	7.52
Samoa	5.33	5.18	5.22
Solomon Islands	4.29	5.57	6.62
Tonga	4.75	3.73	2.94
Vanuatu	4.48	3.75	6.17
<i>Other selected developing economies</i>			
India	36.88	41.4	46.24
Malaysia	64.97	88.14	106.79
Sri Lanka	33.36	40.23	63.21
Thailand	31.92	43.76	44.32
Viet Nam	14.3	31.36	62.84

Source: United Nations Conference on Trade and Development, Liner shipping connectivity index, annual, 2004-2016, UNCTADstat. Available from <http://unctadstat.unctad.org/wds/TableView/tableView.aspx?ReportId=92>.

28. This low number of services to and from Pacific small island developing States is particularly damaging to economic growth as it hinders competitiveness. A 2008 study on the Caribbean concluded the following:

The number of liner shipping companies providing direct services between pairs of countries appears to have a stronger impact on the freight rate than does distance. For routes where there is no company providing direct service, that is, where all containerised maritime trade involves at least one transshipment in a third country's port, freight rates in our sample range from 1,170 to 3,290 USD, with an average of 2,056 USD. For routes with one to four carriers providing direct services the reported freight rates range from 650 to 2,250 USD with an average of 1,449 USD. If five or more competing carriers provide direct services, the freight rate ranges from 650 to 1,730 USD, averaging 973 USD. Statistically, the number of carriers explains around two fifths of the variance of the freight rate.⁴

⁴ Gordon Wilmsmeier and Jan Hoffmann, "Liner shipping connectivity and port infrastructure as determinants of freight rates in the Caribbean", *Maritime Economics & Logistics*, vol. 10, March 2008, pp. 130-151. Available from www.researchgate.net/publication/5223519_Liner_Shipping_Connectivity_and_Port_Infrastructure_as_Determinants_of_Freight_Rates_in_the_Caribbean.

29. In addition, while the number of services to and from Pacific small island developing States is low, the existing services are also often delivered using fewer and smaller ships. The UNCTAD *Review of Maritime Transport 2014* indicates that vessels serving Pacific small island developing States often have a carrying capacity that is far below the world average of 7,076 twenty-foot equivalent units (TEUs) as illustrated in table 4.²

Table 4

Carrying capacity of vessels deployed on services to the Pacific small island developing States

<i>Country</i>	<i>Largest ship (Number of TEUs)</i>
Fiji	2,758
Kiribati	970
Marshall Islands	970
Papua New Guinea	2,546
Samoa	1,304
Solomon Islands	2,082
Tonga	1,043
Vanuatu	2,082

Source: Review of Maritime Transport 2014 (United Nations publication, Sales No. E.14.II.D.5).

30. The hidden fact behind the small size of ships is that the load they carry has been trans-shipped a number of times from the initial “mother” vessel to ships of ever smaller sizes at different ports of calls until it reaches destination. These multiple trans-shipments are another contributor to higher transport costs already inflated by the absence of a return load, forcing importers to pay for the return of the empty containers.

31. The trans-shipment phenomenon is likely to continue and even intensify as the shipping industry increases its TEU capacity through larger, yet fewer, container vessels that will call at major hub ports.

32. This factor contributes to a low Logistics Performance Index for those Pacific small island developing States that have a sufficiently developed logistics industry to be ranked by the World Bank in its assessment of supply chain efficiency across the world. The index is based on a survey of 1,000 logistics professionals worldwide. In its 2016 assessment of 160 countries, the three Pacific small island developing States ranked in the table were Papua New Guinea, Solomon Islands and Fiji in positions 105, 116 and 136 respectively.⁵

33. To address these issues, regional initiatives, such as the formation of shipping commissions including the Micronesian Shipping Commission and the Central Pacific Shipping Commission, have been launched to improve international and intraregional shipping services. These cooperative efforts have made progress in addressing the perennial challenge of irregular,

⁵ World Bank, Logistics Performance Index Global Rankings. Available from <http://lpi.worldbank.org/international/global>.

uncertain and very costly shipping services, especially for the smaller Pacific small island developing States.

34. Improved port infrastructure and facilitation has led to the emergence of several hub ports as trans-shipment points. Some of them are well-established hub ports, while others are building a reputation as hub ports as they increase their trans-shipment activities. These include Auckland, New Zealand, for the South Pacific and Guam for Micronesia. In addition, a number of locations have emerged as subregional hub ports, namely Fiji, French Polynesia, New Caledonia and more recently the Marshall Islands and Solomon Islands. As a result, most trade from Samoa, Tonga and Tuvalu now depends on trans-shipment through Fiji, and commodities from Tonga are trans-shipped through Samoa.

35. While the above developments address international connectivity, inter-island connectivity remains beset with seemingly intractable problems arising mostly from the dissemination of small outer islands over a wide area. The sparse population on these islands and their low level of economic production means unattractive market potential for shipping companies. As a result, maritime infrastructure remains underdeveloped and services are run under public service obligation modalities.

36. With limited scope for private sector involvement, Pacific small island developing States still largely rely on unsafe, poorly designed and poorly maintained second-hand ships. Most also lack adequate maintenance and shipyard facilities to accommodate the majority of domestic vessels, and have limited search-and-rescue capabilities. Furthermore, the overcrowding of vessels and the lack of updated ship surveys and crew certification jeopardize the safety of services.

37. Policy change relaxing cabotage may increase the attractiveness of passing international ship liners to connect different islands within a small island developing State. This could improve national linkages among major and secondary islands as well as their international connectivity. In the case of extremely remote and sparsely populated islands, subsidy may be provided under better defined public service obligation contracts to lower shipping and port costs and ensure transport accessibility and service continuity and quality.

38. Port infrastructure and facilities should be improved to attract ship liners, including investment in ship-to-shore container cranes and sufficient cargo depth of piers to accommodate larger ships. Larger vessels may benefit from economy of scale, while the speed of loading and unloading containers has an impact on the time a vessel spends in the port and, as a consequence, affects freight rates charged by ship liners. Improved transport and trade facilitation at ports and streamlined customs regulations and procedures also make the country more attractive to ship liners.

C. Urban transport

39. In keeping with the trend in the region, total vehicle ownership has also risen in many countries with special needs. However, the range varies from four vehicles per 1,000 inhabitants in Bangladesh to 380 vehicles per 1,000 inhabitants in Kazakhstan for 2013. Most of these vehicles are concentrated in major cities, creating traffic congestion and air pollution and consuming more fossil fuels. There is a high level of motorcycle ownership in Bangladesh, Cambodia, the Lao People's Democratic Republic, Myanmar

and Nepal, which also poses concerns with regard to safety as well as traffic management.

40. Many forms of urban public transport systems, such as public bus services, bus rapid transit systems, subways, urban rails, monorails, elevated rails (sky trains) and cable cars, are already prevalent in the cities of the region. However, in countries with special needs, only a few cities – such as Almaty (Kazakhstan), Baku, Tashkent and Yerevan – have mass transit systems. Bus rapid transit systems are emerging as a popular mass transit mode in many Asian cities because of their lower cost. However, such systems are not yet in operation in least developed countries, landlocked developing countries or small island developing States. Cities such as Dhaka, Kathmandu, Thimphu, Ulaanbaatar, Vientiane and Yangon (Myanmar) are at the planning and development stage of urban transport systems including bus rapid transit.

41. Countries with special needs such as least developed countries, landlocked developing countries and small island developing States are facing challenges to develop and improve the quality and extend the coverage of urban public transport systems and services. Since a significant proportion of the population in Asia still depends on walking and bicycling, these countries are also facing challenges to improve infrastructure for non-motorized transport. The main challenges faced by countries with special needs are: growing vehicle population and the subsequent increase in congestion, road crashes and emissions in cities; lack of integrated urban transport policies; lack of well-established institutions dealing with urban transport; lack of capacity of officials to initiate and implement innovative policies; and, above all, lack of funding and investment for urban transport infrastructure. Small island developing States face additional challenges because of their geographic location and size, and because their cities are located in coastal areas and are thus more vulnerable to the impact of climate change and rising sea levels.

D. Rural connectivity

42. About 30 per cent of the regional population lives in rural communities, many of which are remote and not connected to a wider transport network. An estimated 700 million people in the Asia-Pacific region lack direct access to an all-season road.

43. Rural connectivity is essential to create economic opportunities, generate employment and reduce poverty by connecting farmers to markets and producers to consumers. Furthermore, improved access also has a direct impact on improving the education, health and overall well-being of people living in rural areas, which can increase labour productivity and development outcomes.

44. While many initiatives to improve transport connectivity are being implemented in countries with special needs, physical access to rural areas still remains a problem. All too often, rural roads are poorly engineered, unpaved and only accessible in dryer seasons. Once construction is complete, their maintenance is usually neglected. A major challenge in improving rural access is therefore to expand rural road networks and to upgrade and maintain existing access.

45. Governments, international financing institutions and development partners are funding rural connectivity projects in many least developed countries, landlocked developing countries and small island developing

States, including Afghanistan, Bangladesh, Kyrgyzstan, the Lao People's Democratic Republic, Nepal and Tajikistan. Many countries with special needs are still finding it difficult to fund rural connectivity projects, as their economic returns tend to be low compared to other projects.

46. Countries with special needs should extend the coverage of rural access and connect rural areas with wider national and regional transport networks such as the Asian Highway network and the Trans-Asian Railway network. These countries are facing challenges such as lack of priority accorded to a national rural connectivity policy, lack of well-established local institutions, lack of capacity of officials to initiate and implement innovative rural connectivity policies and, above all, lack of funding and investment for rural transport infrastructure. By virtue of their remote geographic location and because their cities are located in coastal areas, small island developing States also face additional challenges and rural connectivity infrastructure is more vulnerable to the impact of climate change and rising sea levels.

E. Road safety

47. There were approximately 733,000 fatalities from road crashes in the region in 2013, more than half the worldwide total of 1.25 million fatalities. Further, road traffic deaths among vulnerable road users account for nearly 55 per cent of all road traffic fatalities in the region. Motorized two and three-wheelers account for the majority of deaths, at nearly 30 per cent. WHO identifies five key risk factors in road safety: speeding, drink-driving, and not wearing helmets, seat belts and child restraints. According to WHO, over 26 per cent of road traffic fatalities in low- and medium-income countries occur among pedestrians and cyclists.

48. Speeding, drink-driving, reckless and inexperienced driving, overtaking, violation of traffic rules and negligence by drivers are some of leading causes of road crashes in least developed countries, landlocked developing countries and small island developing States.

49. While many regional member countries have been actively addressing the issue of road fatalities and serious injuries caused by road crashes, road safety still remains a huge challenge for countries with special needs.

50. Table 5 shows the changes in road safety fatalities in selected countries with special needs between 2010 and 2013. While there was a reduction in the number of fatalities in some countries, the fatality rate increased in many countries during that period. The average reduction rate for the region is 1.9 per cent each year, which is far from sufficient to enable the region to accomplish Sustainable Development Goal target 3.6, to halve the number of global deaths and injuries from road traffic crashes by 2020. It is aggravated by the fact that motorization increased on average 7.2 per cent each year in the region between 2010 and 2013.

Table 5
Changes in the number of road traffic fatalities between 2010 and 2013
 (Percentage)

<i>Countries where the number has reduced</i>		<i>Countries where the number has not reduced</i>	
<i>Country</i>	<i>Change</i>	<i>Country</i>	<i>Change</i>
Palau	-66.67	Micronesia (Federated States of)	–
Kiribati	-50.00	Samoa	–
Marshall Islands	-25.00	Uzbekistan	4.28
Afghanistan	-23.76	Vanuatu	7.69
Lao People's Democratic Republic	-23.30	Cambodia	8.39
Azerbaijan	-21.55	Kazakhstan	13.35
Timor-Leste	-14.16	Bhutan	18.75
Fiji	-5.56	Kyrgyzstan	19.37
Armenia	-2.15	Mongolia	21.59
Nepal	-1.55	Bangladesh	23.29
		Tajikistan	24.04
		Tonga	33.33
		Solomon Islands	36.71
		Papua New Guinea	38.12
		Myanmar	50.61
		Maldives	100.00
		Cook Islands	150.00
Regional average		5.60	

Source: ESCAP calculations based on data from World Health Organization, *Global Status Report on Road Safety 2013: Supporting a Decade of Action* (Geneva, 2013) and *Global Status Report on Road Safety 2015* (Geneva, 2015).

51. These groups of countries are facing challenges such as:

- (a) Lack of comprehensive road safety policy;
- (b) Lack of a lead national institution to coordinate road safety issues and enhance institutional coordination;
- (c) Lack of sufficient road safety rules and regulations and their enforcement;
- (d) Lack of a proper driver-training system and facilities;
- (e) Lack of capacity of officials to develop and implement road-safety master plans and monitor progress on improving road safety;
- (f) Lack of funding to develop safe infrastructure and implement targeted road-safety programmes and awareness campaigns.

III. Policy options for improving transport connectivity in least developed countries, landlocked developing countries and small island developing States

A. Transport infrastructure and operational connectivity

52. Since the adoption of the Almaty Programme of Action in August 2003, landlocked and transit developing countries, with the support of their development partners, have made substantial progress in the priority area of transport infrastructure development and maintenance, which was recognized by the Vienna Programme of Action in November 2014. Many sections of the Asian Highway network have been upgraded to a higher class, and some portions of missing links in the Trans-Asian Railway network have been constructed while others are at an advanced stage of planning. Progress has also been made to better integrate these networks at key intermodal facilities, such as inland container depots or dry ports.

53. Yet much remains to be done in bridging infrastructure gaps in the medium to long term, and progress will continue to be conditioned by the level of political commitment and the involvement of a range of multisectoral stakeholders in both the public and private sectors.

54. Based on a review of the progress achieved and the challenges and opportunities linked to future infrastructure development, it seems advisable that concerned countries make the most of existing institutional frameworks that promote a coordinated approach to the development of transport and logistics in the region by, for instance, becoming parties to the three existing intergovernmental agreements developed under the aegis of ESCAP: the Intergovernmental Agreement on the Asian Highway Network, Intergovernmental Agreement on the Trans-Asian Railway Network and Intergovernmental Agreement on Dry Ports.

55. Given the interdependence of economies, internal capacity should also be developed for the efficient evaluation, planning and implementation of transport infrastructure projects, with a specific focus on those that are best able to contribute to the development of an international integrated intermodal transport and logistics system. A first step could be to explore the possibility of planning joint and coordinated development and operationalization of international intermodal transport corridors, in particular those leading to the region's main international seaports.

56. Quite evidently, the efficiency of movements along these corridors also requires that other issues be addressed, such as: (a) the proper maintenance of existing assets; (b) the introduction of new technologies smoothing the operationalization of transport infrastructure networks, such as intelligent transport systems; (c) the introduction of commercial initiatives to promote the use of inland transport services for international trade as a competitive alternative to maritime transport, in particular in railway organizations; and (d) the establishment of an environment conducive to the emergence of efficient logistics.

57. Given their geographic location, transport operational connectivity is a critical objective for the landlocked developing countries in order to reap the benefits of globalization. Establishing efficient integrated intermodal transport systems may play an essential role in this endeavour.

58. Member States adopted the Regional Strategic Framework for the Facilitation of International Road Transport in 2012, which provides a comprehensive approach to dealing with non-physical barriers afflicting international road transport. It identifies six fundamental issues preventing road transport from fulfilling its growth enabler role, which are still hampering access by landlocked developing countries to global markets: (a) road transport permits and traffic rights; (b) visas for professional drivers and crews of road vehicles; (c) temporary importation of road vehicles; (d) insurance of vehicles; (e) vehicle weights and dimensions; and (f) vehicle registration and inspection certificates.

59. The Framework also provides seven modalities to support facilitation of international road transport, including: (a) building an effective legal regime; (b) wider applications of new technologies; (c) development of professional training for international road transport; (d) establishment/strengthening of national facilitation coordination mechanisms; (e) promotion of joint control at border crossings; (f) promotion of economic zones at border crossings, dry ports and logistics centres; and (g) further application of facilitation tools.

60. Proper use of these key modalities could support members in implementing the Vienna Programme of Action, which emphasizes the importance of partnerships between landlocked developing countries and transit countries, such as technical and administrative arrangements in their transport, customs and logistics systems.

61. To support members and associate members in implementing transport facilitation measures as provided under the Framework, the secretariat developed four mutually complementary transport facilitation models to address the operational challenges of regional connectivity. The models have the potential to comprehensively tackle non-physical barriers in international road transport in the region by providing a complete package of solutions for diverse issues in cross-border and transit transport, notably for landlocked developing countries.

62. The four transport facilitation models are: (a) the Secure Cross-Border Transport Model,⁶ which demonstrates the use of new technologies in transport facilitation; (b) the Efficient Cross-Border Transport Model,⁷ which uses developments in trucking industry practices where tractor and trailer can be swapped to deal with non-physical barriers; (c) the Model on Integrated Controls at Border Crossings,⁸ which provides ways to streamline the flow of information from various agencies at the border to avoid duplication; and (d) the Time/Cost-Distance Methodology,⁹ which provides a diagnostic tool and a way to monitor the performance of transport corridors.

63. To support members and associate members in fully harnessing the digital technologies for transport facilitation, the secretariat developed a guide on paperless transit transport, which will enhance border officials' understanding to plan and implement paperless transit transport systems in the region. This will particularly help landlocked and transit developing countries to increase the efficiency of transit processes and cross-border

⁶ See www.unescap.org/resources/secure-cross-border-transport-model.

⁷ See www.unescap.org/resources/efficient-cross-border-transport-models.

⁸ See www.unescap.org/resources/model-integrated-controls-border-crossings.

⁹ See www.unescap.org/resources/timecost-distance-methodology.

transactions in line with action proposed under paragraph 26 (h) of the Vienna Programme of Action.¹⁰

64. The secretariat developed a draft model subregional agreement on transport facilitation as well as a draft model bilateral agreement on international road transport.¹¹ Once adopted by the Ministerial Conference on Transport, these can be used as guidelines by countries while negotiating or renegotiating transport agreements, with a view to achieve gradual region-wide harmonization of legal instruments on cross-border and transit transport at both multilateral and bilateral levels.

65. The secretariat also developed a draft model multilateral permit for international road transport as a tool for simplified implementation of new, existing and recently negotiated multilateral international agreements. At the same time, the model multilateral permit could be used as an incentive to increase the professionalism of transport operators and the technical condition of vehicles. The draft model is submitted for adoption at the Ministerial Conference on Transport.¹²

66. Railway transport is energy efficient, environmentally friendly and particularly important for landlocked developing countries in providing efficient access to the sea. Member States adopted the Regional Cooperation Framework for the Facilitation of International Railway Transport in 2015, which comprehensively covers facilitation issues specific to international railway transport. It identifies four fundamental issues and eleven areas for cooperation among members for facilitation of international railway transport. The fundamental issues identified are: (a) standards for railway infrastructure, facilities and equipment; (b) break-of-gauge; (c) different legal regimes for railway transport contracts; and (d) coordination of regulatory controls and inspections at border interchange stations. In order to support members in dealing with these issues, the secretariat is undertaking a project on the harmonization of rules and regulations for the facilitation of international railway transport. The project aims to develop: (a) common minimum technical standards for operational and technical parameters required for efficient international railway transport; and (b) model or manual of good practices at the border interchange stations to reduce the time taken to conduct regulatory controls for international railway operations.

67. The eleven areas for cooperation indicated in the Regional Cooperation Framework could contribute significantly to improving the operational connectivity of landlocked developing countries:

- (a) Participation in international railway organizations;
- (b) Formulation of subregional and bilateral agreements on the facilitation of railway transport;
- (c) Cooperation to standardize cross-border railway operations;
- (d) Use of advance passenger/cargo information system(s);
- (e) Arrangements for the exchange of wagons;

¹⁰ General Assembly resolution 69/137, annex II.

¹¹ Annexes II and III to the draft ministerial declaration on sustainable transport connectivity in Asia and the Pacific (document E/ESCAP/MCT(3)/WP.2).

¹² Annex IV to the draft ministerial declaration on sustainable transport connectivity in Asia and the Pacific (document E/ESCAP/MCT(3)/WP.2).

- (f) Use of new technologies in train operations as well as in container tracking;
- (g) Developing human resources for cross-border railway operations;
- (h) Establishment of logistics centres/dry ports and maintenance hubs at or near border interchange stations, particularly along railway freight corridors;
- (i) Simplification of the intermodal interface of railways with maritime, air and road transport;
- (j) Promotion of the corridor approach in the facilitation of international railway transport;
- (k) Work towards paperless railway freight transport.

68. In order to support members and associate members in their efforts to use information and communications technology as the key to efficient and effective trade and transport logistics systems, the secretariat undertook a comprehensive study¹³ to review the technical aspects of existing logistics information systems, identify best practices and provide recommendations on regional technical standards in the establishment and utilization of such systems. Landlocked developing countries could significantly benefit from utilizing logistics information technology systems or other information and communications technology resources in order to establish national logistics information systems as public platforms providing effective and efficient information services. To this end, they could use the standard model of logistics information systems¹⁴ proposed by the study and submitted for adoption at the Ministerial Conference on Transport.

69. ESCAP, jointly with the Economic Commission for Europe, supports the work of the Thematic Working Group on Sustainable Transport, Transit and Connectivity of the United Nations Special Programme for the Economies of Central Asia. The Thematic Working Group focuses on developing new and extending existing transport networks in the region, as well as implementing projects and programmes to support landlocked developing countries and transit developing countries in Central Asia.

B. Maritime infrastructure and services in Pacific small island developing States

70. Smallness and remoteness are obvious obstacles undermining the development of transport and trade logistics of small island developing States. The challenge for small island developing States is to avoid high transport costs that compress trade flows and reduce overall transport connectivity. Domestic inter-island transport is an important issue for States that are made up of islands spread across vast distances. There is a need to promote forward-looking research and to seek to foster new ideas to generate the port logistics and development framework that small island developing States can use. Small island developing States should seek to derive gains from operating at a small scale, making use of local resources and catering

¹³ Economic and Social Commission for Asia and the Pacific, "Regional study: the use of logistics information systems for increased efficiency and effectiveness" (Bangkok, 2016). Available from www.unescap.org/resources/regional-study-use-logistics-information-systems-increased-efficiency-and-effectiveness.

¹⁴ Annex V to the draft ministerial declaration on sustainable transport connectivity in Asia and the Pacific (document E/ESCAP/MCT(3)/WP.2).

for local needs. Relevant examples include developing niche markets, building partnerships with traders and focusing on areas where small island developing States master the processes and where local resources are available.

71. The obvious solution to the key challenge in inter-island shipping facing the Pacific small island developing States is to develop a larger collective economy through subregional cooperation and integration. The importance of such an approach has been recognized by the Pacific States. The Pacific Plan, endorsed by the Leaders at the Pacific Islands Forum meeting in 2005 and subsequently revised in 2007, called for a more coordinated approach in order to enhance economies of scale and effectiveness in addressing regional transport services.

72. The Secretariat of the Pacific Community and the Pacific Islands Forum Secretariat have been active in the maritime transport sector, and both have extensive programmes to support the development of inter-island shipping.

73. The Forum Principles on Regional Transport Services, adopted in Apia in 2004, include a call for increased efforts to be made to implement regional or subregional solutions to problems in the transport sector through, for example: (a) strategic alliances; (b) liberalization of the economic regulatory environment; and (c) agreement by Forum island countries to regional cabotage, where they could benefit from more services and greater competition.

74. Among the above three measures, the most important one is the introduction of regional cabotage, whereby each State would abandon the principle by which domestic trade is exclusively in the hands of domestic companies and allow operation by ship operators from other countries. Past attempts to implement similar arrangements have met considerable difficulty due to conflicting interests of stakeholders, highlighting the need for a high level of cooperation.

75. A strategy to assist Pacific small island developing States in the field of inter-island shipping may include advocating inter-island transport connectivity to promote conceptual change of stakeholders in support of subregional cooperation, supporting the leading role of the Pacific Islands Forum Secretariat and the Secretariat of the Pacific Community in specific technical areas for inter-island shipping, and producing and disseminating materials on inter-island transport connectivity.

C. Urban transport

76. A study focusing on the challenges and necessities of countries with special needs regarding the planning and development of urban transport systems would be useful. The study could look at the emerging trends in urban transport and present initiatives that are making urban transport systems cleaner, safer, more efficient and more affordable. It could include a collection of good practices applicable to these groups of countries that are being successfully implemented in similar countries and cities: for example, comprehensive integrated urban transport planning techniques, various forms of public transport systems including bus rapid transit and their integration and assessment, the potential use of intelligent transport systems, the use of alternative energy in transport, safety enhancement, the use of hybrid and electric vehicles, congestion management, the promotion and use of non-motorized transport and related infrastructure and cable cars.

77. The study could also focus on policies and techniques for developing disaster-resilient and climate-adaptive urban transport systems that can withstand the impacts of natural disaster, climate change and rising sea levels, which would be very useful for coastal cities and small island developing States.

78. As financing and mobilizing investment in development of urban transport systems and services is a major challenge for these groups of countries, the study could explore available funding opportunities from international development banks and bilateral donors. It could also examine the funding opportunities available through green climate funds, global environment facilities, clean technology funds, clean development mechanisms, international climate initiatives and joint crediting mechanisms. The study could further investigate the potential for private sector financing and various models of public-private partnerships.

79. Focused technical assistance and capacity-building programmes would be crucial to develop and improve urban transport systems and services in least developed countries, landlocked developing countries and small island developing States. The capacity-building programmes must be aligned with the needs and requests of these groups of countries. Training and capacity-building in the areas of project development and making proposals for funding would be very useful.

80. The capacity-building programmes could aim to: (a) establish and strengthen institutions to plan and develop urban transport systems; (b) raise awareness and share experiences and good practices in developing sustainable urban transport systems; (c) enhance the capacity of senior and mid-level officials in national and local governments, municipalities and city authorities; and (d) strengthen institutional coordination between national, local and city agencies.

D. Rural connectivity

81. A study on improving rural connectivity in countries with special needs would be helpful, which could explore the challenges faced and the requirements of the countries and rural communities. The study could investigate innovative approaches, techniques and methodologies in the planning, construction, supervision and maintenance of rural connectivity, including gender mainstreaming. It could also look at ways to enhance partnerships among key stakeholders, such as between local communities, local and national government, the private sector and donors. As funding is a major challenge for rural connectivity projects, it could also explore innovative ways of evaluating rural access projects that take account of tangible and intangible benefits. The study could also explore better use of locally available materials, the construction of low-maintenance rural access, the adoption of disaster- and climate-resilient design, the use of low-cost pavements and the inclusion of local-community planning, supervision, construction and maintenance of rural roads.

82. In order to plan and implement rural connectivity projects, the capacity of government officials, local officials and communities needs to be enhanced to achieve better results. The use of capacity-building workshops and seminars to share the findings of the study on improving rural connectivity in least developed countries, landlocked developing countries and small island developing States will be a very useful mechanism. As rural connectivity projects are not a priority consideration for many national Governments, it would be useful to advocate the importance of rural access to

the achievement of the Sustainable Development Goals on poverty and hunger. Capacity-building workshops and seminars could highlight various effective policies and strategies that could be utilized to improve rural connectivity and provide opportunities for key stakeholders to share knowledge, experiences and good practices in developing sustainable rural connectivity, as well as in the area of project development and making proposals for funding. At the planning stage, the secretariat needs to align capacity-building activities with the needs of and requests of least developed countries, landlocked developing countries and small island developing States.

E. Road safety

83. The secretariat is working to refine regional road safety goals, targets and indicators in order to meet Sustainable Development Goal target 3.6 to halve the number of global deaths and injuries from road traffic accidents by 2020. These goals would serve as guidelines for countries with special needs to refine their road safety policies and strategies. As the rates of fatality and injuries from road crashes are relatively high in these countries, a study on improving road safety to achieve the Sustainable Development Goal target in line with Global Plan for the Decade of Action for Road Safety 2011-2020 would be very useful. The study could also look at ways of minimizing risk factors such as speeding, drink-driving and not wearing helmets, seat belts and child restraints. Other areas that need to be covered in the study are improving the safety of motorized two-wheelers and vulnerable road users such as cyclists and pedestrians in least developed countries, landlocked developing countries and small island developing States.

84. Support in building capacities and refining road safety policies and strategies is essential for these groups of countries. National workshops could be organized to help countries with special needs to strengthen institutional coordination, as many stakeholders are involved in road safety issues, as well as to develop and refine road safety policies and action plans in line with the regional road safety goals, targets and indicators. In addition, regional capacity-building activities could be planned to enhance the sharing of global and regional experiences and knowledge, as well as to present the findings of the proposed study on improving road safety in countries with special needs. The secretariat would continue to address the needs and requests of least developed countries, landlocked developing countries and small island developing States in providing advisory services and planning capacity-building activities on improving road safety to support achievement of the Sustainable Development Goal target.

IV. Issues for consideration

85. Governments are invited to provide guidance on the following elements suggested for inclusion in the draft regional action programme for sustainable transport connectivity in Asia and the Pacific, phase I (2017-2021).

86. In the States with special needs of the region (least developed countries, landlocked developing countries and small island developing States), transport infrastructure and operational connectivity, urban and rural transport, and road safety are major considerations. Transport infrastructure and services suffer from challenges associated with high costs and poor performance and a lack of institutional expertise to develop and implement policy and programmes. In order to improve connectivity to wider networks and take advantage of the economic opportunity that this would provide, there is a need to better understand optimal delivery methods and build capacity to

implement transport policies. Innovative and inclusive policies and frameworks that are suitable for States with special needs are required to develop sustainable regional transport connectivity, including urban and rural connectivity, and improve road safety.

87. While most countries of the region have made progress in enhancing transport connectivity with their neighbours, least developed countries, landlocked developing countries and small island developing States continue to face specific development challenges owing to their geographic and economic characteristics. Renewed efforts need to be made to address these challenges so that the States concerned can easily connect to the region's main transport infrastructure networks, including ports, for safe, reliable and affordable access to global markets.

Immediate objective. States with special needs (least developed countries, landlocked developing countries and small island developing States) are to be assisted in developing and implementing innovative policies and frameworks to improve and enhance sustainable transport connectivity with adequate inclusion of urban and rural transport and road safety.

Outputs

1. Study on transport facilitation, integrated intermodal transport and logistics for least developed countries and landlocked developing countries;
2. Study on approaches to connect least developed countries, landlocked developing countries and small island developing States to the region's infrastructure networks, including ports;
3. Study on developing railway networks and improving urban and rural transport and road safety and security in least developed countries, landlocked developing countries and small island developing States;
4. Study on enhancing maritime connectivity for small island developing States;
5. Technical assistance to landlocked developing countries and neighbouring transit developing countries in planning/establishing/operating efficient integrated multimodal transport corridors;
6. Regional inputs to the global report on the midterm review of the implementation of the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024 in the transport sector;¹⁵

¹⁵ In paragraph 78 of the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024 (A/CONF.225/L.1), the General Assembly is invited to consider conducting a comprehensive high-level midterm review of the implementation of the Vienna Programme of Action. In line with the practice adopted for the Almaty Programme of Action, where the Commission by its resolution 63/5 requested the Executive Secretary to provide the necessary support for the preparatory process for the midterm review of the implementation of the Almaty Programme of Action, the present output has been included in the regional inputs for the midterm review of the Vienna Programme of Action.

7. Workshop/seminar/meeting/advisory service to support least developed countries, landlocked developing countries and small island developing States to enhance transport connectivity, improve road safety and develop urban and rural transport.

Indicators of achievement

1. Report on transport facilitation, integrated intermodal transport and logistics in least developed countries and landlocked developing countries.
 2. Report on the connection of least developed countries, landlocked developing countries and small island developing States to the regional infrastructure networks.
 3. Report on the status and improvement of urban and rural transport and road safety in least developed countries, landlocked developing countries and small island developing States.
 4. Report on enhancing maritime connectivity in small island developing States.
 5. Measures taken by members and associate members to incorporate policy recommendations into their national policies and plans to enhance regional connectivity.
 6. Regional report on the implementation of the Vienna Programme of Action in the transport sector.
 7. Capacity-building workshop(s)/seminar(s)/meeting(s) on transport connectivity, road safety, and urban and rural transport.
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