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Working Group on the Trans-Asian Railway Network

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Policies and issues relating to the development of the Trans-Asian Railway network

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Note by the secretariat

Summary

The present document highlights the work performed by the secretariat in collaboration with member States as well as policies and issues related to the Trans-Asian Railway network. The Working Group on the Trans-Asian Railway Network is invited to review the document and consider policies and approaches for: (a) promoting investment in the Trans-Asian Railway network, including intermodal interfaces; (b) creating the conditions for the mutation of railway organizations into more commercially driven entities; (c) creating the conditions for the development of rail-based international intermodal freight corridors; and (d) putting in place a process for providing the secretariat with updated information on priority rail infrastructure development projects at regular intervals.

I. Introduction

1. The transport sector is crucially important to the development of modern economies and will become increasingly so as globalization requires ever greater synchronization between business processes at both ends of the supply chain, as well as along its entire length. One result of this is that integrated logistics services and international freight transport systems are now closely interconnected. While this is true for any country and any region of the world, the phenomenon and its proper management take on particular relevance in Asia as the region becomes increasingly integrated and a number of countries are now at the centre of major logistics hubs.

2. The vision of an international integrated intermodal transport and logistics system, which was articulated by ministers in the Busan Declaration on Transport Development in Asia and the Pacific (November 2006) and reiterated in the Ministerial Declaration on Transport Development in Asia

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and the Pacific (March 2012),[1] aims at fully realizing the potential economic and social benefits of improved transport connectivity, while mitigating the negative externalities of the transport sector. The Trans-Asian Railway network is an important building block in the realization of this vision. In this respect, issues related to the development of the Trans-Asian Railway network are regularly discussed at legislative meetings. With a view to providing the members of the Working Group on the Trans-Asian Railway Network with a ready reference, the secretariat herein outlines some of the decisions of legislative bodies that are relevant to the Trans-Asian Railway network and rail transport in general. The present document also highlights selected policies and issues which the Working Group may consider useful in its discussion on promoting the development of rail-based international intermodal corridors using the routes of the Trans-Asian Railway network.

II. Decisions and recommendations of legislative bodies

3. Since the Intergovernmental Agreement on the Trans-Asian Railway Network entered into force on 11 June 2009, the Trans-Asian Railway network and issues related to its development and operationalization have been considered at a series of high-level legislative meetings, as summarized in the annex. In addition, related issues have been discussed with development partners at meetings or events, such as the meeting of the heads of Economic Cooperation Organization railway authorities organized by the secretariat of that Organization, the Special Working Group on the Singapore-Kunming Rail Link project organized by the secretariat of the Association of Southeast Asian Nations (ASEAN), the Meeting of Chief Executives of Railways of South and South-East Asia and the International Rail Freight Conference organized by the Organization for Cooperation between Railways.

4. The legislative meetings held in 2014 and 2015 included: (a) the seventieth session of the Commission (Bangkok, 23 May 2014 and 4-8 August 2014); (b) the fourth session of the Committee on Transport (Bangkok, 15-17 October 2014); and (c) the seventy-first session of the Commission (Bangkok, 25-29 May 2015). These meetings highlighted the role of the Trans-Asian Railway network in promoting regional integration, the progress made in its development and formalization, and its importance as an essential component of a future international integrated intermodal transport and logistics system for the region. Relevant excerpts from the reports of those legislative meetings are contained in the annex to the present document.

III. Activities of the secretariat

A. Promoting a greater use of railway transport through enhanced competitiveness

5. In recent times, railways have benefited from renewed public support and received increased political backing. This is due, to a large extent, to the ongoing debate on climate change, which means the environmental impact of industry, including the transport sector, is under scrutiny.

[1] The declaration was subsequently endorsed by the Commission in its resolution 68/4 on the implementation of the Ministerial Declaration on Transport Development in Asia and the Pacific, including the Regional Action Programme for Transport Development in Asia and the Pacific, phase II (2012-2016), and the Regional Strategic Framework for the Facilitation of International Road Transport.

6. In the ongoing debate, rail is receiving a favourable assessment and the potential benefits to be gained from a modal shift, partly due to the energy efficiency of rail transport and its lower greenhouse gas emissions, are encouraging policymakers to put a greater use of rail for the movement of both passenger and freight at the centre of their long-term transport development strategies. This goodwill is further encouraged by the outcome of the United Nations Conference on Sustainable Development and could become a mandated commitment under the post-2015 development agenda, which will set sustainable development goals. Yet, policies could be influenced and good intentions tested by a range of external factors. Above all, the environmental issue is not yet a key determinant by which shippers select their transport mode and railways cannot rely on hypothetical injunctions from Governments to divert traffic to them. A modal shift will only happen if railways are seen to offer competitive services.

7. With the above in mind, and following the mandates of the Commission and Committee sessions, including those noted in the annex to the present document, both the secretariat and member States have been implementing activities to promote the development of the Trans-Asian Railway network.

8. In phase II (2012-2016) of the Regional Action Programme for Transport Development in Asia and the Pacific, adopted at the second session of the Ministerial Conference on Transport, which was held in Bangkok in March 2012, the secretariat was mandated to promote regional and interregional connectivity and cooperation through the further development of the Trans-Asian Railway and Asian Highway networks as well as through dry ports. The activities under the Regional Action Programme are aimed at bringing about the realization of an international integrated intermodal transport and logistics system for the region.

9. As a follow-up to the above, the secretariat, with funding support from the Government of the Russian Federation, undertook a study aimed at enhancing the operationalization of the Trans-Asian Railway network, focusing on the costing of railway services as well as facilitation of rail transport. The costing part of the study acknowledged the critical importance for railway managers to have the ability to measure the costs of operating individual lines in order to estimate their contribution to income and corporate profitability, while also recognizing that not all of them have access to the costing systems or models that produce satisfactory results and are at the same time easy to apply and update.

10. Understanding their costs will make it easier for railway organizations to obtain a commercial mandate from their Governments. It will also enable them to offer credible cost estimates for the social services that they are often required to provide and to seek adequate compensation. Similarly, Governments will enjoy greater returns on the investment already allocated towards the development of their national railway infrastructure. Finally, both will be able to approach international donors and financial institutions with lending requests that are based on financially sound and credible needs analyses.

11. Recognizing this challenge, ESCAP developed a point-to-point traffic costing model to help managers make sound decisions about the acceptance or rejection of individual traffics, for which fare or tariff levels are established by market forces. The secretariat now proposes to present the model as well as the principles of costing, along with the relationships between costing, marketing strategy and corporate plan, to railway managers

of the region at a seminar scheduled to be held in Bangkok on 10 and 11 December 2015.

B. Trans-Asian Railway and dry ports development

12. Using the Asian Highway and Trans-Asian Railway networks as two major building blocks, the secretariat has been promoting the development of an international integrated intermodal transport and logistics system for the region. Another important element of such a system is the development and operation of a network of dry ports, which serve as intermodal interfaces and enable the efficient transfer of goods between different modes of transport, thereby extending the reach of the Trans-Asian Railway network and its complementarity with the Asian Highway network.

13. The continuing development of intra-Asia trade is an undeniable reality. At the same time, countries with direct sea access are developing their port infrastructure to trade globally with the underlying necessity to connect these ports to inland destinations. With ever greater volumes being transported over domestic and international distances, there is an even greater need to jointly develop and operationalize a network of efficient freight corridors. However, these corridors will function only if they are connected to strategically located intermodal facilities where modes and logistics services operate in a coordinated manner.

14. Recognizing the need for a coordinated approach to corridor development and building on the success of the Intergovernmental Agreement on the Asian Highway Network and Intergovernmental Agreement on the Trans-Asian Railway Network in fostering regional cooperation in the area of transport, the Committee on Transport at its third session (October 2012) finalized the draft of an Intergovernmental Agreement on Dry Ports, which was later adopted by the Commission in its resolution 69/7. The Agreement opened for signature on 7 November 2013 during the second session of the Forum of Asian Ministers of Transport, during which 14 member States signed it,[2] including one (Thailand) that deposited an instrument of ratification. Subsequently, two more countries became Parties to the Agreement, namely the Republic of Korea through ratification (April 2014) and Viet Nam through approval (October 2014), and three more countries became signatories — Bangladesh (September 2014), Sri Lanka (May 2014) and Turkey (December 2014).

15. Countries of the Asia-Pacific region have already channelled substantial investments towards developing their rail and road infrastructure. While these efforts were directed at meeting national transport requirements, greater focus on integrating these different national networks into an efficient regional transport system able to serve the increasing international nature of trade can pay substantial dividends.

16. Having a well-established potential for fast economic development, being in a position to draw upon a large potential of human resources and enjoying one of the world's youngest populations, the Asia-Pacific region now needs to equip itself with a comprehensive intermodal transport system reaching all the corners of the continent and meeting the ever growing demand for fast, reliable and safe connections.

[2] Armenia, Cambodia, China, Indonesia, the Islamic Republic of Iran, the Lao People's Democratic Republic, Mongolia, Myanmar, Nepal, the Republic of Korea, the Russian Federation, Tajikistan, Thailand and Viet Nam.

17. The development of international trade and tourism has created new requirements that existing transport modes cannot always independently satisfy, especially as regards the movement of freight. Trying to address new demands within the present infrastructure framework with limited interconnectivity is resulting in unbalanced utilization of transport modes, congestion and environmental degradation, all of which are bound to get worse if concerted remedial action is not taken.

18. Providing transport services for the increasing share of international trade among the countries of Asia and developing selected land or sea-cum-land transport corridors to bridge Europe and Asia are becoming an increasingly important priority for the region. Exploring the potential synergies between the various land transport modes — more specifically between the Asian Highway and Trans-Asian Railway networks — can provide an efficient intermodal network that would make the best use of the existing and new capacities of individual countries. In this process a number of actions have to be considered at the national and regional levels. They are:

(a) The identification of international intermodal corridors best suited to achieve connectivity and serve intra- and interregional trade;

(b) The construction of the missing links, if any, obstructing the operationalization of the identified corridors;

(c) The harmonization of transport standards and norms, including in the development of intermodal facilities;

(d) The prioritization of projects through an assessment of their economic viability with a view to approaching new financing institutions, such as the Asian Infrastructure Investment Bank;

(e) The implementation of a regional framework for the facilitation of international rail transport.

19. The use of international intermodal corridors can substantially increase the modal share of more resource-efficient transport modes such as railways by exploiting the mode's ability to convey a wider range of freight than pipelines, its greater carrying capacity than air and road transport and its inherent ability to operate at low external costs. A shift to intermodal transport would indeed also reduce the need for capacity expansion of the existing highways and could benefit economies of scale for road operators by allowing for greater utilization of vehicle fleets. In this regard, greater utilization of railways would also help reduce the cost of freight transport, increase efficiency in the overall supply and distribution chain and reduce the carbon footprint of freight transport.

20. For the Asian Highway and Trans-Asian Railway to be transformed into a fully operational network with efficient linkages across their hinterlands, there is a need for parallel mapping of infrastructure and transport services. This would entail quantification of flows and obstacles inhibiting movements, both infrastructural and institutional. Traffic needs to be assessed according to volumes and flows, modal performances need to be compared so that more focus can be directed at areas where the rail and road modes find their best relevance and comparative advantages and where operational impediments need to be addressed. This quantification will assist greatly in identifying overall needs and operational constraints.

C. Operationalization of the Trans-Asian Railway network

21. Since the third meeting of the Working Group convened in Bangkok in November 2013, Governments and railway organizations of the region have redoubled their efforts to enhance the role of railways in the overall transport mix of their countries and in moving international trade. In China, intermodal services continue to gain ground in the overall traffic task of China Railway Corporation, both domestically and internationally with increased long-distance cross-border movements to Central Asian countries and Mongolia. China Railway Corporation is also building on its growing successes at running international intermodal rail services to Europe. Since September 2011, DB Schenker Rail Automotive, the German Railways' automotive specialist in rail freight transport, has already managed some 200 container trains filled with automobile parts on their way from Leipzig and Wackersdorf, Germany, to the Shenyang plant in Liaoning province (China), where components are used in the assembly of BMW vehicles.[3] In partnership with European logistics companies, China Railway Corporation has launched a number of point-to-point container block-train services. In 2014, in partnership with DB Schenker, the transport and logistics arm of German Railways, services were launched between Hamburg (Germany) and Zhengzhou (China) and Yiwu (China) and Madrid. Also in 2014, services were launched between Suzhou (China) and Warsaw, in partnership with DHL. More recently, in July 2015, the first container block-train operated between Kunming (China) and the port of Rotterdam (Netherlands). These services are routed either through the Sino-Russian border at Manzhouli/Zabaikalsk, or through the Sino-Kazakh border at Alashankou/Dostyk. They then continue through the railways of the Russian Federation, Belarus, Poland and Germany.

22. Similar services are also being operated or launched in other parts of the region. Since 2009, the railways of the Islamic Republic of Iran, Pakistan and Turkey have been operating a bi-directional service between Islamabad and Istanbul via Tehran. In 2014, DB Schenker and Turkish State Railways launched a weekly semi-trailer service between Cologne and the Çerkezköy freight terminal near Istanbul. The service, which goes through Austria, Hungary, Romania and Bulgaria, benefits from simplified customs procedures at the Turkish border.

23. The above examples demonstrate that cooperation between railways as well as between railways and other entities, such as customs, can lead to the successful establishment of international intermodal transport operations as self-standing commercial entities that can provide rail freight services that are in demand. Container transport, combined transport (transporting trucks over a longer distance, for example on a transit route through a country), and high-speed passenger transport are areas where railways are proving themselves as efficient transport providers.

24. The above examples also demonstrate the benefits of partnering with the private sector. In December 2003, the then Ministry of Railways of China recognized the importance of having a specialized agency to manage the development of, and to operate, intermodal rail services in China and, for this purpose, established the China Railway Container Transport Corporation as a wholly owned subsidiary. More recently, the Corporation was re-established as a joint venture company, CR Intermodal, with private sector shareholding added to its own shareholding, including those of NWS Holdings of Hong Kong, China (container service provider); CIMC (container manufacturer);

[3] Source: www.dbschenker.com.

Luck Glory International Limited (Hong Kong, China-based investor); and DBML (subsidiary of the German railway company, Deutsche Bahn). The restructuring of its container logistics operations with an infusion of private sector shareholdings gave the Ministry of Railways and now its successor, China Railway Corporation,[4] the commercial and logistical expertise necessary to manage these operations profitably and in a manner satisfying the needs of container customers.

25. This approach compares favourably with the North American intermodal rail system, the success of which was a result of tailoring rail intermodal services based on customer needs and willingness to pay, and collaborating with other logistics service providers to allow railways to concentrate on their core competency and leave other segments of the end-to-end intermodal supply chain to third-party logistics providers.

D. Creating the conditions for a modal shift

1. Port/rail interface

26. A recently published industry magazine wrote that "China's overall lack of on-dock rail capabilities is particularly concerning given the country's track record of rapid growth in trade in general and in container throughput in particular, especially in recent years".[5] The same can be said for all countries operating maritime ports. For example, in the Russian Federation, the limited length of container loading/unloading tracks of the far eastern ports requires the splitting and reassembly of trains in marshalling yards outside the port. Indeed, given the reliance of countries of the region on ports and the ability of rail to clear port landside loading areas of many containers in one single movement, it is surprising that only limited efforts have been made to develop greater synergies between port and rail infrastructure.

27. Very few, if any, ports of the region have layouts that are compatible with the efficient operation of container trains. Typically, rail loading/unloading tracks are of insufficient length to accommodate full-length trains and are located too far from berth-side container stacks to allow single-lift loading and unloading operations using port handling equipment, such as portal cranes or reach-stackers. Consequently, most ports, far from encouraging a modal shift from road to rail, actually reinforce the predominant use of road transport for inbound and outbound container movement.

2. Inland terminals

28. The rationale for the development of intermodal facilities has been exposed above. It must, however, be reiterated here that the provision of adequate on-dock rail infrastructure in ports must also be matched at inland terminals, such as dry ports.

29. If the substantial advantage of rail to deliver in a single train operation to a port or an inland terminal a high volume of containers for a minimum level of operating costs is to be fully exploited, the terminal must be designed

[4] China Railway Corporation was given the operational functions of the Ministry of Railways after the latter was abolished and had its regulatory functions transferred to the Ministry of Transport in March 2013.

[5] Greg Knowler, "China's rail freight network poised for change, World Bank says", 25 March 2015. Available from www.joc.com/rail-intermodal/china%E2%80%99s-rail-freight-network-poised-change-world-bank-says_20150325.html.

for train lengths and payloads in a way that optimizes operating costs throughout any given corridor between origin and destination.

30. In China, the approach has been to develop a network of 18 inland intermodal hubs based on port-hub and hub-hub through the operation of fixed formation container trains, each comprising 40 double-stack wagons and conveying up to 160 twenty-foot equivalent units. A similar approach has been implemented in the Russian Federation where en route infrastructure, in particular along the Trans-Siberian main line, can accommodate standard length container trains of 38 single-tier wagons, each 24 metres in length and with a loading capacity of two 40-foot containers.

31. Terminals must be located as close as possible to the main line so that no time is lost entering and exiting the facility and, whenever possible, be set aside from other yards so that their operations are not hampered by other shunting movements. At the same time, easy access to road vehicles should be guaranteed for efficiency of the road/rail interface. In Bangladesh, for example, Dhaka's container terminal is adjacent to the Kamalapur Railway Station in a heavily congested part of the city, which complicates road access. At the same time, the movements of containers to and out of the facility often conflict with commuter services to and from Narayanganj. The relevant authorities in Bangladesh are now making provisions for the development of a new facility at Dhirasram Bazar, some 28 kilometres by road and rail north of Dhaka.

3. Building capacity

32. The high cost base of railways means that they need to carry high traffic volumes to operate efficiently and economically. In order to do so, railways must imperatively create sufficient capacity. This requires good long-term planning, decisive management and sufficient funding.

33. A major problem in this area is the age of rolling stock. In many railways of the region, under-investment in operating assets and workshop facilities has resulted in insufficient numbers of serviceable locomotives and container wagons. The issue plagued the efficiency of the container land bridge by the railways of Malaysia and Thailand between Port Klang (Malaysia) and Bangkok despite early commercial success of the enterprise in its first five years of operation. It is also a contributing factor to the low level of containers travelling on Bangladesh Railway between the port of Chittagong and Dhaka.

34. In Thailand, a shortage of locomotives and wagons has also frequently been cited as a major impediment to the use of rail to haul containers between the port of Laem Chabang and the container depot at Lat Krabang. The recent tenders for a supply of new wagons with an axle load of 20 tonnes together with a procurement contract for 20 new locomotives from China with 3,650 horsepower, a 20-tonne axle load and AC transmission will allow an increase in train lengths from 30 to 40 wagons, giving the State Railway of Thailand the capacity to increase its container business.

35. Capacity-related investment strategies differ among countries. However, they all demonstrate a commitment to plan investment in infrastructure, motive power and rolling stock with varying levels of priority between each of these elements depending on immediate needs and available resources.

36. In China, of the above-mentioned 18 dedicated rail container terminals, those already completed are gradually being linked by railway

routes that have been adapted for the operation of double-stack container trains. A few years ago, Russian Railways and Indian Railways also started experimenting with the concept. However, there are limitations on the application of the double stack concept, not the least being those imposed by structure and loading gauge restrictions on many trunk lines throughout the region. The China Railway Corporation has a commitment to overcome these restrictions on its existing lines, but the adaptation of its network requires investment on a scale that would be beyond the capacity of most countries of the region to finance.

37. While line capacity increases in China seem to be achieved through further upgrading of the lines where residual capacity has been freed by the introduction of high-speed services, Indian Railways has followed a different approach through the construction of new dedicated freight lines to carry double-stack container trains.

E. Updating the secretariat on Trans-Asian Railway development

38. Adequate knowledge of land infrastructure in member countries is often piecemeal. This situation prevents a clear understanding of the state of infrastructure at the subregional and regional levels. It also complicates the development of strategies aimed at addressing demand arising from new trade patterns and prioritizing investment across corridors and across modes.

39. In this connection, the updating of the Trans-Asian Railway network in its route configuration as well as in its technical characteristics and levels of traffic is a necessity. Regular updating will guarantee that international perspectives are not lost at a time when the need for international movements is set to expand further under such large-scale initiatives as China's Silk Road Economic Belt and 21st Century Maritime Silk Road, or the Republic of Korea's "Eurasian Initiative". These initiatives supplement existing ones, such as the Master Plan on ASEAN Connectivity and do not exclude others that may be set up in the future.

40. The secretariat maintains regular contact with the seats of Government, permanent representatives (embassies in Bangkok) and railway organizations in member States regarding issues related to the development of the Trans-Asian Railway network. Member States are invited to provide updated information on initiatives to develop rail infrastructure in their territory, management indicators relating to staffing and traffic levels and new international rail services along the routes of the Trans-Asian Railway, in particular international container block-train services. This information could be disseminated, as examples of best practice, at meetings or be used as inputs for legislative documents. The collection of data should not require any additional efforts by member countries as the information is in most cases already being developed and published in a number of yearly railway statistical documents.

IV. Issues for consideration

41. The Working Group is invited to review the document and consider policies and approaches for: (a) promoting investment in the Trans-Asian Railway, including intermodal interfaces; (b) creating the conditions for the mutation of railway organizations into more commercially driven entities; (c) creating the conditions for the development of rail-based international intermodal freight corridors; and (d) putting in place a process for providing the secretariat with updated information on priority rail infrastructure development projects at regular intervals.

Annex

Excerpts from the reports of legislative meetings related to the Trans-Asian Railway

Legislative meeting	*Decisions and recommendations*
Commission, seventieth session, Bangkok, 23 May 2014 (Phase I) and 4-8 August 2014 (Phase II)	• The Commission noted the important contribution of the secretariat to the advancement of regional connectivity through its work in transport, in particular under the framework of the Asian Highway and Trans-Asian Railway programmes and agreed on continued cooperation with the secretariat to facilitate the development of regional transport infrastructure and the realization of interregional and transit transport.[a] • The Commission welcomed the signing of the Intergovernmental Agreement on Dry Ports, which would usefully supplement the Asian Highway and Trans-Asian Railway networks, contribute to economic prosperity and enhance the future environmental sustainability of transport. It observed that the intergovernmental agreements on the Asian Highway, Trans-Asian Railway and dry ports had laid the groundwork for cooperation in regional connectivity and that, in general, related transport activities had spearheaded infrastructure development in the region.[b]
Committee on Transport, fourth session, Bangkok, 15-17 October 2014	• The Committee noted with satisfaction the work of the secretariat in the implementation of the Regional Action Programme for Transport Development in Asia and the Pacific, phase II (2012-2016).[c] • The Committee reaffirmed its support for the development of the Asian Highway, Trans-Asian Railway and dry ports, and recognized their role in supporting the development of an intermodal transportation and logistics system. In that respect, the Committee noted the progress that was being made in developing/upgrading transport infrastructure in member countries, including the Asian Highway and Trans-Asian Railway.[d]
Commission, seventy-first session, Bangkok, 25-29 May 2015	• The Commission indicated the potential of public-private partnerships as a way to channel more resources towards infrastructure development and noted that the establishment of new financing initiatives, such as the Asia Infrastructure Investment Bank and Silk Road Fund, could also contribute to strengthened regional connectivity. It also acknowledged the continued role played by the existing bilateral and multilateral financial institutions such as the Asian Development Bank.[e] • The Commission further recognized that connectivity was a multi-stakeholder issue that required enhanced regional cooperation and the development of synergies with the assistance programmes undertaken by subregional groupings such as the Association of Southeast Asian Nations (ASEAN), Bangladesh-China-India-Myanmar Forum for Regional Cooperation, the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, the Greater Mekong Subregion, the South Asian Association for Regional Cooperation (SAARC) and the South Asia Subregional Economic Cooperation.[f]

Notes:

[a] E/ESCAP/70/35, para. 255.

[b] E/ESCAP/70/35, para. 256.

[c] E/ESCAP/CTR(4)/7, para. 9.

[d] E/ESCAP/CTR(4)/7, para. 10.

[e] E/ESCAP/71/43, para 68.

[f] E/ESCAP/71/43, para 69.