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Building the missing links in the Trans-Asian Railway network

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Note by the secretariat

Summary

The Asian Highway network, the Trans-Asian Railway network and the network of dry ports of international importance have laid the foundations for creating international integrated intermodal transport and logistics systems. However, the unrestricted flow of goods and people that the region needs for continued economic growth and enhanced social inclusion requires wider connectivity between members and associate members. A crucial issue for the Trans-Asian Railway is the missing links that still prevent the network from being a solid basis for the development of international intermodal corridors reaching all corners of the region. The present document presents a brief summary of those missing links. Member States are invited to review the present document and inform the Working Group on the Trans-Asian Railway Network on the (a) plans under consideration to construct the missing links in their territories; (b) estimated budgets; (c) expected completion dates; and (d) specific challenges faced in the process.

I. Introduction

1. The region's impressive record of economic growth and poverty reduction is underpinned largely by success in getting goods to markets due to infrastructure connectivity between countries of the region and between the region and the rest of the world. Yet, despite undeniable progress, overall levels of infrastructure availability vary substantially across countries and are still below what is required to realize regional economic cooperation and integration.

2. Recognizing this challenge, the first Ministerial Conference on Regional Economic Cooperation and Integration in Asia and the Pacific, which was held in Bangkok from 17 to 20 December 2013, resolved to pursue enhanced regional economic cooperation and integration in a number

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of areas, including the development of seamless connectivity across the region in the areas of transport, energy, and information and communications technology.[1]

3. In the area of transport, physical connectivity and institutional connectivity are two sides of the same coin, with physical connectivity possibly being the easiest to comprehend and, relatively speaking, the least challenging to address as it rests primarily on the provision of the necessary financial resources. A key objective in creating physical connectivity is to establish a safe, efficient and integrated regional transport system that is capable of supporting the region's economic development. Acknowledging the importance of this objective, the Ministerial Conference on Transport, which was held in Busan, Republic of Korea, in November 2006, adopted the Busan Declaration on Transport Development in Asia and the Pacific,[2] in which the vision of an international integrated intermodal transport and logistics system was articulated.

4. Since the Busan Declaration was adopted, the international community has launched a number of global programmes and initiatives which are expanding the scope and influencing the implementation of transport-related activities. Most notable among these initiatives is the adoption by the General Assembly in September 2015 of resolution 70/1, entitled "Transforming our world: the 2030 Agenda for Sustainable Development", which contains the Sustainable Development Goals. The implication for the transport sector is that, while continuing to move goods and people safely and efficiently across the region, the sector's role as a driver of economic growth must be managed in a socially responsible manner that contributes to the region's economic, social and environmental needs.

5. At this early stage in the realization of the 2030 Agenda, there appears to be a broad consensus that the provision of seamless and sustainable connectivity in support of market integration and economic dynamism may offer a way to align the pursuit of economic growth with a wider distribution of prosperity and greater environmental protection.

II. Trans-Asian Railway and seamless connectivity

6. The concept of seamless connectivity conjures up the vision of an integrated transport system that allows goods and people to travel efficiently across modes and national borders. The realization of such a system is based on the assumption that each mode would be used based on its relative strengths, thereby leading to a total greater than the sum of its parts. However, for this to happen, a number of prerequisites must be met. In particular, policies need to be coordinated, technical standards harmonized, operational procedures synchronized, information and communication systems developed and deployed, and cross-border legislation aligned. Not least, infrastructure gaps need to be filled.

7. The lack of rail inter-country connectivity varies between subregions and influences the operational readiness, and therefore the attractiveness, of the Trans-Asian Railway network. Above all, where rail is not yet ready to play its vital role in meeting the mobility requirements of people and industry, it risks falling under the radar of policymakers at a time when the implementation of the 2030 Agenda is putting pressure on them to articulate a

[1] See E/ESCAP/MCREI/3.

[2] E/ESCAP/63/13, chap. V.

long-term vision of sustainable development that encompasses the next two or three decades.

8. It is therefore important that a joint effort be made to complete the Trans-Asian Railway network and to optimize the attractiveness of the various corridor options that it offers, in particular through their integration with ports and intermodal facilities.

9. In its current configuration, the Trans-Asian Railway network comprises 118,000 km of existing or planned railway tracks that have been selected by member countries for their current or future potential to carry international trade. Of this total, 12,400 km are missing, representing 10.5 per cent of the network. This is the sum of the line sections which have been nominated by member States to be part of the network but have yet to be constructed. The total investment required to put in place these missing links is estimated at $75.6 billion.

III. Trans-Asian Railway missing links by subregion

10. A missing link is an absence of continuous railway infrastructure within one country, often due to local geography, or an absence of physical linkages between the railway networks of neighbouring countries. For the latter, in most cases, missing links exist because the link was never there in the first place. Bridging them requires a joint approach by the railways concerned and by their respective Governments. Elements such as the importance of the link to regional economic development or trade may influence the decision to give the green light to a particular project. However, the traffic-generating potential of each route, compared to the cost of constructing the necessary infrastructure, will no doubt be a crucial factor, especially if private sector investments are to be sought. Annex I contains a table of the missing links in the Trans-Asian Railway network, distances and estimated construction costs.

A. Missing links in the Association of Southeast Asian Nations subregion

11. Containing 38 per cent of the missing links, or approximately 4,760 km, the Association of Southeast Asian Nations (ASEAN) subregion is the least rail-connected economic grouping in the Economic and Social Commission for Asia and the Pacific (ESCAP) region. Rail connectivity exists only between Malaysia and Thailand and between Thailand and the Lao People's Democratic Republic, although the line section in Lao territory is only 3.5 km that prolong the Thai rail network from Nongkhai in northern Thailand to the city of Thanaleng, where it currently terminates. With regard to rail connectivity with neighbouring subregions, cross-border rail connectivity exists only between China and Viet Nam via (a) the 296-km line from Hanoi to the Lao Cai, Viet Nam/Hekou, China, border point and (b) the 162-km line from Hanoi to the Dong Dang, Viet Nam/Pingxiang, China, border point. Although a number of projects are in various stages of implementation, there is to date no effective rail connectivity between China and the Lao People's Democratic Republic or Myanmar. Finally, there is also no rail connectivity between the ASEAN subregion and South Asia, for which Myanmar would be the transit country, although Indian Railways has already started construction of a rail line destined to reach the Moreh, India/Tamu, Myanmar, border point, and the Government of Bangladesh recently received financial assistance from the Asian Development Bank for a southern line that would extend the country's rail network southwards first to Cox's Bazar, Bangladesh, and eventually to Gundum, Myanmar, at the border.

12. Construction of the missing links of the Trans-Asian Railway in the ASEAN subregion would further the objectives of the Master Plan on ASEAN Connectivity and create new transport options within the subregion, as well as between the ASEAN subregion and North-East Asia via China, and between the ASEAN subregion and South Asia via India. For example, completion of the missing link between Cambodia and Thailand will open up a conduit for Cambodia's manufacturing sector through Thailand's main port at Laem Chabang where greater maritime connectivity is available. Meanwhile, construction in the Lao People's Democratic Republic of a main north-south line section linking Boten at its border with China to Mu Gia at the Lao border with Viet Nam would open up a range of maritime options for both Chinese and Lao goods via Port Klang in Malaysia and the ports of Laem Chabang in Thailand or Danang in Viet Nam. Finally, completion of the missing links in Myanmar would create the first direct rail link between China and India. Issues of rail connectivity in the ASEAN subregion are discussed by the countries concerned at the meetings of the Special Working Group on the Singapore-Kunming Rail Link project, which are held annually under the auspices of the ASEAN secretariat.

B. Missing links in the Caucasus subregion, the Islamic Republic of Iran and Turkey

13. The Caucasus subregion comprises three ESCAP member States, namely, Armenia, Azerbaijan and Georgia. These have been or are implementing key rail development projects, including construction work on some of the estimated 500 km of Trans-Asian Railway missing links which, when completed, will substantially improve regional transport connectivity.

14. Together with Turkey, Azerbaijan and Georgia have been implementing a number of rail infrastructure modernization programmes under the Baku-Tbilisi-Kars rail project, including the construction of the Trans-Asian Railway missing link between Akhalkalaki, Georgia, and Kars, Turkey, which is due for completion in 2017 and will provide connectivity for countries along a Turkey-Caucasus-Central Asia-East Asia corridor. There are two other important missing links affecting the subregion. The first is the Martuni to Meghri line section in Armenia. It consists of a 315-km line section from Martuni to the Armenia-Iranian border and a 70-km section in the Islamic Republic of Iran to connect to the country's rail network. Construction of the line will open up new markets for Armenia via Iranian ports on the Persian Gulf, while giving industry in the Islamic Republic of Iran access to markets in Eastern Europe via Georgia's ports on the Black Sea. The second is the line section that will connect Astara, Azerbaijan, to Rasht, Islamic Republic of Iran. The 178-km section consists of 8 km in Azerbaijan and 170 km in the Islamic Republic of Iran. The section in Azerbaijan is due to be commissioned in the first half of 2017, while funding issues have slowed down progress on the Iranian section. The link remains essential to regional connectivity and, when completed, will offer access between Northern Europe, including the Russian Federation, and countries in South and South-East Asia.

C. Missing links in the Central Asia subregion and the northern part of Afghanistan

15. Whether as part of the Trans-Asian Railway network or outside the framework that it provides, Governments of Central Asia are implementing or considering a number of rail infrastructure projects to enhance their connectivity with neighbouring subregions, in particular through China and the Islamic Republic of Iran, which can offer access to international ports. Of

particular importance for the subregion are linkages in the northern part of Afghanistan and in Kyrgyzstan and Tajikistan.

16. Essential to improved connectivity in the subregion is the construction of a rail section from Kashi, China, to Elok, Tajikistan, through Kyrgyzstan, comprising two parts: (a) a 274-km section between Torugart, the border point between China and Kyrgyzstan, and Karamik, the border point between Kyrgyzstan and Tajikistan and (b) a 296-km section between Karamik and Elok which is not yet designated as part of the Trans-Asian Railway network. Although also not part of the Trans-Asian Railway network at this stage, another option through Kyrgyzstan is via a shorter 200-km link from Irkeshtam, another border point between China and Kyrgyzstan, to Karamik.

17. These, however, will only be fully relevant if linkages to the Islamic Republic of Iran materialize either in the form of the existing rail networks of Turkmenistan and Uzbekistan, or the proposed rail infrastructure that the Government of Afghanistan plans to develop, in particular the 1,300-km east-west line in the northern part of the country from Nizhniy Pyandzh at the border with Tajikistan to Shamtigh at the border with the Islamic Republic of Iran.

D. Missing links in the South Asia subregion and the southern part of Afghanistan

18. An estimated 2,500 km of Trans-Asian Railway missing links are located in South Asia, not including planned projects in the southern part of Afghanistan where, unlike in the northern part of the country, concrete implementation has not yet started.

19. Trans-Asian Railway missing links fall in two categories: missing links which, when completed, will enhance regional connectivity and missing links which are of a more domestic nature.

20. There are missing links in Bangladesh, India and Pakistan that have the potential to enhance regional connectivity. In Bangladesh, the Government plans to construct a 215-km line from Dhaka to Jessore as part of the Padma Bridge rail link project. The line will offer a rail connection to India that is 185 km shorter than the existing one via Darsana, Bangladesh, and which has added relevance in the context of the new 15-km rail connection that the Governments of Bangladesh and India plan to realize between Akhaura, Bangladesh, and Agartala, India. This short link will substantially improve rail connectivity between the north-eastern states of India and the ports of Kolkata, India, and Chittagong, Bangladesh. The Government of India has also started work on the 219-km Jiribam to Moreh line section. Although progress has been slow, the link is important for regional connectivity and falls under the plan of connecting South Asia with South-East Asia via Myanmar. In Pakistan, the Government is planning to build a 900-km rail line from Mastung on the Quetta-to-Koh-i-Taftan line to the newly developed port of Gwadar. When constructed, this link will not only serve the economic growth of Pakistan but also provide maritime connectivity to locations in the southern part of Afghanistan and western China when the necessary links are put in place in these countries. The Governments of Afghanistan and Pakistan have made plans for the future construction of cross-border linkages between Chaman, Pakistan, and Kandahar, Afghanistan, and between Peshawar, Pakistan, and Kabul via Jalalabad, Afghanistan. Meanwhile, China and Pakistan are implementing a number of infrastructure projects under the China-Pakistan Economic Corridor programme, although they are not yet designated as Trans-Asian

Railway missing links. These projects include a 1,080-km new rail line from Kashi, China, to Havelian, Pakistan, comprising a 350-km section in China and a 680-km section in Pakistan.

21. Missing links in Bangladesh, Nepal and Sri Lanka of a more domestic nature have also been designated as part of the Trans-Asian Railway network. In Bangladesh, construction of the 102-km line section between Dohazari and Cox's Bazar recently received financial support from the Asian Development Bank. The viability of the project is reported to arise from an expected increase in the number of tourists to Cox's Bazar and, later, from connection to a planned deep-sea port on Matarbari Island, north of Cox's Bazar. In the longer term, the Government of Bangladesh plans to extend the line to Gundum at its border with Myanmar for rail connectivity to South-East Asia. In Nepal, the Government has developed a rail infrastructure development master plan as a tool for more inclusive economic development. The network will consist of a 920-km east-west trunk line from Kakarvitta to Brahma Mandi on its eastern and western borders with India, respectively. In Sri Lanka, work is ongoing on the 52-km line between Kurunegala and Dambulla as part of the Kurunegala-Habarana project which the Government is implementing to promote provincial development in the country's eastern and north-central provinces by connecting the Dambulla Dedicated Economic Centre to the national rail network. Improving domestic rail connectivity to the southern province is also the objective behind the construction of the 114.5-km line between Matara and Kataragama. More than 70 per cent of the construction work on the Matara-Kataragama railway line up to Beliatta has been completed. The line is also expected to offer connectivity to the port being developed at Hambantota.

E. Missing links in the North-East Asia subregion

22. In general, countries of North-East Asia have good physical rail connections among one another and, currently, existing Trans-Asian Railway missing links in the subregion are either of a more domestic nature or would serve the long-term goal of providing connectivity with other subregions, in particular Central Asia and South-East Asia. In this regard, the cross-border rail development initiatives of the Government of China are of particular importance. With regard to South-East Asia, these initiatives fall within the framework of the Singapore-Kunming Rail Link project, which is an important element of the Master Plan on ASEAN Connectivity and aims at improving land transport infrastructure connectivity between China and ASEAN member States. With the upgrading of the existing rail connection with Viet Nam via the Hekou, China/Lao Cai, Viet Nam, border point already completed, attention is now focusing on the construction of rail connections with the Lao People's Democratic Republic and Myanmar. Under a 2010 memorandum of understanding, China has agreed with the Lao People's Democratic Republic to build a railway from Kunming, Yunnan province, China, through the Lao People's Democratic Republic via Luang Prabang and Vientiane, with the objective of eventually linking up with Thailand at Nongkhai. As part of the project, in 2016, China commissioned the 88-km section between Kunming and Yuxi, China, that will be shared by the China-Laos Railway and the China-Viet Nam Railway. Meanwhile, work is ongoing on the Chinese side of the border to establish rail connectivity with Myanmar by connecting Ruili, Yunnan province, China, to Lashio, Myanmar.

23. As regards rail connectivity with Central Asia, there are currently two entry points from China into Central Asia, both of them to Kazakhstan, through the Alashankou, China/Dostyk, Kazakhstan, cross-border section and the Khorgos Pass at the border between the two countries. Another possible

future connection that is being discussed is from Kashi, China, to the border with Kyrgyzstan at either Torugart (165 km), or Irkeshtam (200 km). Both variants would offer quick transit to Afghanistan and the Islamic Republic of Iran.

IV. Issues for consideration

24. Member States are invited to review the present document and inform the Working Group on the Trans-Asian Railway Network on (a) plans under consideration to construct the missing links in their territories; (b) estimated budgets for construction with indication of financing options (for example, government budget, loans or public-private partnerships); (c) expected completion dates; (d) specific challenges faced in the process; (e) other rail infrastructure projects which may not be part of the Trans-Asian Railway network at this stage but which are nonetheless being considered to enhance cross-border connectivity with neighbouring member States; and (f) any assistance the secretariat can provide to bridge the gaps in the Trans-Asian Railway network.

Annex I

Missing links in the Trans-Asian Railway network

Countries	*Missing links*	*Distances (km)*	*Costs (Millions of United States dollars)*
Armenia	Martuni to Meghri	316	3 200.00
Bangladesh	Dohazari to Gundum	128	1 700.00
	Narayanganj to Jessore	187	4 390.00
Cambodia	Poipet to Sisophon	48	80.00
	Bat Deng to Kratie	258	686.00
China	Kashi to Torugart (Kyrgyzstan)	165	
	Yuxi to Mohan	507	8 200.00
	Dali to Ruili	330	4 200.00
Georgia	Akhalkalaki to Kartsakhi	30	
India	Jiribam to Moreh	219	649.00
Iran (Islamic Republic of)	Rasht to Astara	170	600.00
	Arak to Khosravi	536	480.00
Kyrgyzstan	Kochkor to Arpa	357	2 100.00
	Karasu to Torugart	274	2 000.00
Lao People's Democratic Republic	Vientiane to Mu Gia (via Thakhet)	450	732.00
	Vientiane to Boten	417	7 000.00
	Thanaleng to Vientiane	9	50.00
	Pakse to Savannakhet	230	5 000.00
	Savannakhet to Densavanh/Lao Bao	222	5 000.00
Mongolia	Nariin Sukhait to Choibalsan	1 591	4 455.00
	Nariin Sukhait to Shiveekhuren	46	129.00
	Tavan Tolgoi to Gashuun Sukhait	267	748.00
	Khuut to Bichigt	200	560.00
	Khuut to Numrug	380	1 064.00
	Erdenet to Arts Suuri	747	1 640.00
Myanmar	Lashio to Muse	232	480.00
	Kalay to Tamu	127	98.00
	Thanpyuzayat to Three Pagoda Pass	110	246.00

Countries	*Missing links*	*Distances (km)*	*Costs (Millions of United States dollars)*
Nepal	Kakarvitta to Brahma Mandi	920	
Pakistan	Mastung to Gwadar	901	1 500.00
Sri Lanka	Beliatta to Kataragama	88	590.00
	Kurunegala to Dambulla	52	169.00
Thailand	Bua Yai (Ban Phai) to Mukdahan to Nakhon Phanom	355	1 840.00
	Ubonratchathani to Chong Mek	80	293.00
	Nakhonsawan to Mae Sod	284	911.00
	Denchai-Chiangrai-Chiang Khong	326	2 360.00
	Namtok to Three Pagoda Pass	153	491.00
	Aranyaprathet to Klong Luk	6	0.50
Turkey	Kars to border with Georgia	68	
Viet Nam	Vung Ang - Tan Ap - Mu Gia	119	281.00
	Ho Chi Minh City (Bien Hoa) to Vung Tau	115	2 700.00
	Ho Chi Minh City to Loc Ninh	129	903.00
	Ho Chi Minh City to Can Tho	174	7 462.00
	Dong Ha - Lao Bao	82	567.00
	Total	**12 405**	**75 554.50**