



# GMS TRANSPORT SECTOR STRATEGY 2030

TOWARD A SEAMLESS, EFFICIENT,  
RELIABLE, AND SUSTAINABLE  
GMS TRANSPORT SYSTEM

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NOVEMBER 2018



ADB

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On the cover: The BTS Skytrain tracks, along with a network of elevated highways and pedestrian walkways, help ease traffic along Rama IV Road; this area is one of Bangkok’s busiest commercial and business hubs (photo by Lester Ledesma).

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# Abbreviations

ADB	-	Asian Development Bank
ASEAN	-	Association of Southeast Asian Nations
CBTA	-	Cross-Border Transport Facilitation Agreement
EWEC	-	East–West Economic Corridor
FRETA	-	Freight Transport Association
GMRA	-	Greater Mekong Railway Association
GMS	-	Greater Mekong Subregion
GMS-SF	-	GMS Strategic Framework
ICD	-	inland container depot
Lao PDR	-	Lao People’s Democratic Republic
NSEC	-	North–South Economic Corridor
PPP	-	public–private partnership
PRC	-	People’s Republic of China
RIF	-	Regional Investment Framework
RIF-IP	-	Regional Investment Framework Implementation Plan
SAPE	-	sector assistance program evaluation
SEC	-	Southern Economic Corridor
STF	-	Subregional Transport Forum
TA	-	technical assistance
TSS	-	Transport Sector Strategy
TTF	-	transport and trade facilitation





# I. BACKGROUND AND INTRODUCTION

Noi Bai–Lao Cai Highway. This 244-kilometer stretch starts at Noi Bai, Ha Noi, and ends at Lao Cai in northwest Viet Nam near the border with the People’s Republic of China (photo by Ariel Javellana/ADB).

Cooperation in the transport sector has been at the core of the Greater Mekong Subregion (GMS) Economic Cooperation Program (hereinafter GMS Program) since its inception in 1992. The main thrust of the GMS Program was eliminating the barriers to cooperation. The significant lack of connectivity was a critical constraint on economic relations among the GMS countries.

The initial effort to pursue a coordinated approach to establishing links and developing the transport sector in the GMS was made in 1994 through the Subregional Transport Sector Study for the Greater Mekong Subregion (hereinafter GMS Transport Sector Study), which examined the (i) most important links that need to be established, (ii) most suitable modes for such links, (iii) criteria for prioritizing system elements, and (iv) possible phasing of development.<sup>1</sup> The GMS Transport Sector Study identified a set of subregional transport projects covering road, rail, water, and air transport.

It guided GMS transport cooperation during 1994–2005, with the list of projects being updated and refined over time. The priority projects in the GMS Transport Sector Study became the backbone of the GMS East–West Economic Corridor (EWEC), the

North–South Economic Corridor (NSEC), and the Southern Economic Corridor (SEC) when the GMS countries adopted the economic corridor concept in 1998. They also constituted the first set of GMS transport projects—e.g., the Phnom Penh–Ho Chi Minh City Highway, the East–West Corridor Project, and the Northern Economic Corridor (Boten–Houayxay) Project—that were implemented under the GMS Program. As these projects neared completion, the need to address policy and regulatory issues involving the movement of people and goods across borders became urgent. The GMS Cross-Border Transport Facilitation Agreement (CBTA) was thus initiated in 1999 to complement hardware with software of connectivity in the GMS.<sup>2</sup>

The confidence built over many years of cooperation among the GMS countries enabled them to subsequently agree on a common agenda for developing the GMS transport system, focusing on dimensions that can benefit from a GMS-wide approach. The rapid transformation from mostly centrally planned to open, market-oriented economies and the concomitant increase in demand for transport services also underscored the importance of a coordinated approach to transport development in the subregion. Such an agenda was embodied in the GMS Transport Sector Strategy 2006–2015 (hereinafter

<sup>1</sup> Asian Development Bank (ADB). 1995. *Subregional Transport Sector Study for the Greater Mekong Subregion: Final Report*. Manila.

<sup>2</sup> The CBTA is a legal multilateral instrument among the GMS countries designed to facilitate the movement of people, goods, and vehicles across borders.



TSS 2015), which was endorsed by the GMS countries in 2006.<sup>3</sup> TSS 2015 discussed the challenges in the transport sector, defined the subregion's strategic objectives for the sector's development, and identified investment and technical assistance (TA) projects. A key feature of TSS 2015 was its use of a transport corridor and corridor network approach.

TSS 2015 stated the rationale for a subregional strategy for GMS transport development: "There is almost universal agreement that a GMS-wide approach benefits all countries concerned, that it provides the most appropriate forum for deepening cooperation in the transport sector, and that it should be pursued with vigor."<sup>4</sup> TSS 2015 has served as a useful framework for coordination of subregional cooperation in the GMS transport sector, defining the direction, focus, and shape of transport sector development in the GMS. It has enabled the GMS countries to identify, promote, and implement high-priority subregional transport connectivity projects in a generally well-sequenced and synchronized manner

starting with the most important links. In the absence of TSS 2015, investment projects in the GMS transport sector would have been pursued without a strong subregional foundation and rationale.<sup>5</sup>

The transport sector continues to be central to the GMS Program, accounting for 88% of the total project cost of all sectors in the Regional Investment Framework Implementation Plan (RIF-IP) 2014–2018 and the Revised RIF-IP 2020.<sup>6</sup> At the same time, there have been important changes in the operating environment of TSS 2015 that need to be taken into account in the agenda for developing the GMS transport sector beyond 2015. A new transport sector strategy is needed to (i) provide a framework for sustaining progress in the development of the GMS transport sector, (ii) help enhance coordination and cooperation among the GMS countries in their efforts to strengthen subregional connectivity, and (iii) broaden the support of stakeholders to GMS transport development.

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<sup>3</sup> ADB. 2007. *GMS Transport Sector Strategy 2006–2015: Coast to Coast and Mountain to Sea: Toward Integrated Mekong Transport System*. Manila. <https://www.greatermekong.org/gms-transport-strategy-2006%E2%80%932015>.

<sup>4</sup> Footnote 3, p. 6.

<sup>5</sup> ADB and ADB Institute. 2009. *Infrastructure for a Seamless Asia*. Tokyo. This publication provides a strong rationale for a coordinated approach to infrastructure development in Asia and its subregions.

<sup>6</sup> ADB. 2014. *Greater Mekong Subregion Regional Investment Framework Implementation Plan (2014–2018)*. Manila; and ADB. 2016. *Greater Mekong Subregion Regional Investment Framework Implementation Plan: Mid-Term Review and Revised Regional Investment Framework Implementation Plan 2020*. Paper prepared for the 21st GMS Ministerial Conference. Chiang Rai, Thailand. 30 November–1 December.



## II. TIME HORIZON, STRUCTURE, AND SCOPE OF THE STRATEGY

Aerial view of the Noi Bai–Lao Cai Highway. The highway is an integral section of the eastern link of the Greater Mekong Subregion Northern Economic Corridor. It connects Kunming—in Yunnan Province of the People’s Republic of China—with Ha Noi and the port in Hai Phong, Viet Nam (photo by Ariel Javellana/ADB).

The new GMS TSS 2018–2030 (hereinafter TSS 2030) consists of a strategic framework covering 2018–2030 and a set of performance indicators over a shorter period initially covering 2018–2022. This time frame is considered appropriate due to the long gestation period of transport sector initiatives. The first time slice of TSS 2030 and the GMS Strategic Framework (GMS-SF) end in 2022.<sup>7</sup> Thus, the preparation of the second time slice of TSS 2030 will be synchronized and closely coordinated with the formulation of the succeeding GMS-SF covering the period beyond 2022.

Unlike TSS 2015 and the earlier GMS Transport Sector Study, TSS 2030 is mainly a strategic document providing a common framework for GMS cooperation in the transport sector. As noted, the formulation of TSS 2015 involved the identification of transport investment and TA projects, which were then made an integral part of the strategy. TSS 2030 takes a different approach because the identification and prioritization of GMS investment projects in the transport sector has been conducted as part of overall subregional investment programming under the GMS Regional Investment Framework (RIF) mechanism since 2012.

Several changes in the project pipeline and priorities in TSS 2015 were made shortly after the GMS countries adopted it in 2006. The revised TSS 2015 project pipeline was then incorporated in the Vientiane Plan of Action, which was endorsed by the GMS countries in 2008. In 2012, the GMS countries conducted an assessment of GMS transport development and prepared a new set of transport projects in support of the new GMS-SF 2012–2022. This pipeline of transport projects was subsequently included in the GMS RIF 2013–2022, which was endorsed by the GMS countries in 2013.<sup>8</sup> A smaller set of projects in the RIF was later incorporated in the RIF-IP for 2014–2018, which was in turn superseded by RIF-IP 2020.<sup>9</sup>

The RIF mechanism, which is expected to be maintained, has instituted a process allowing the GMS countries to review and refine the pipeline of projects in the GMS Program regularly and continuously as required by the dynamic nature of developments in the subregion. Under this arrangement, TSS 2030 will be the primary basis for identifying and prioritizing GMS transport projects in the RIF and RIF-IP, with the projects in the RIF-IP 2020 serving as the initial

<sup>7</sup> ADB. 2011. *The Greater Mekong Subregion Economic Cooperation Program Strategic Framework 2012–2022*. Manila.

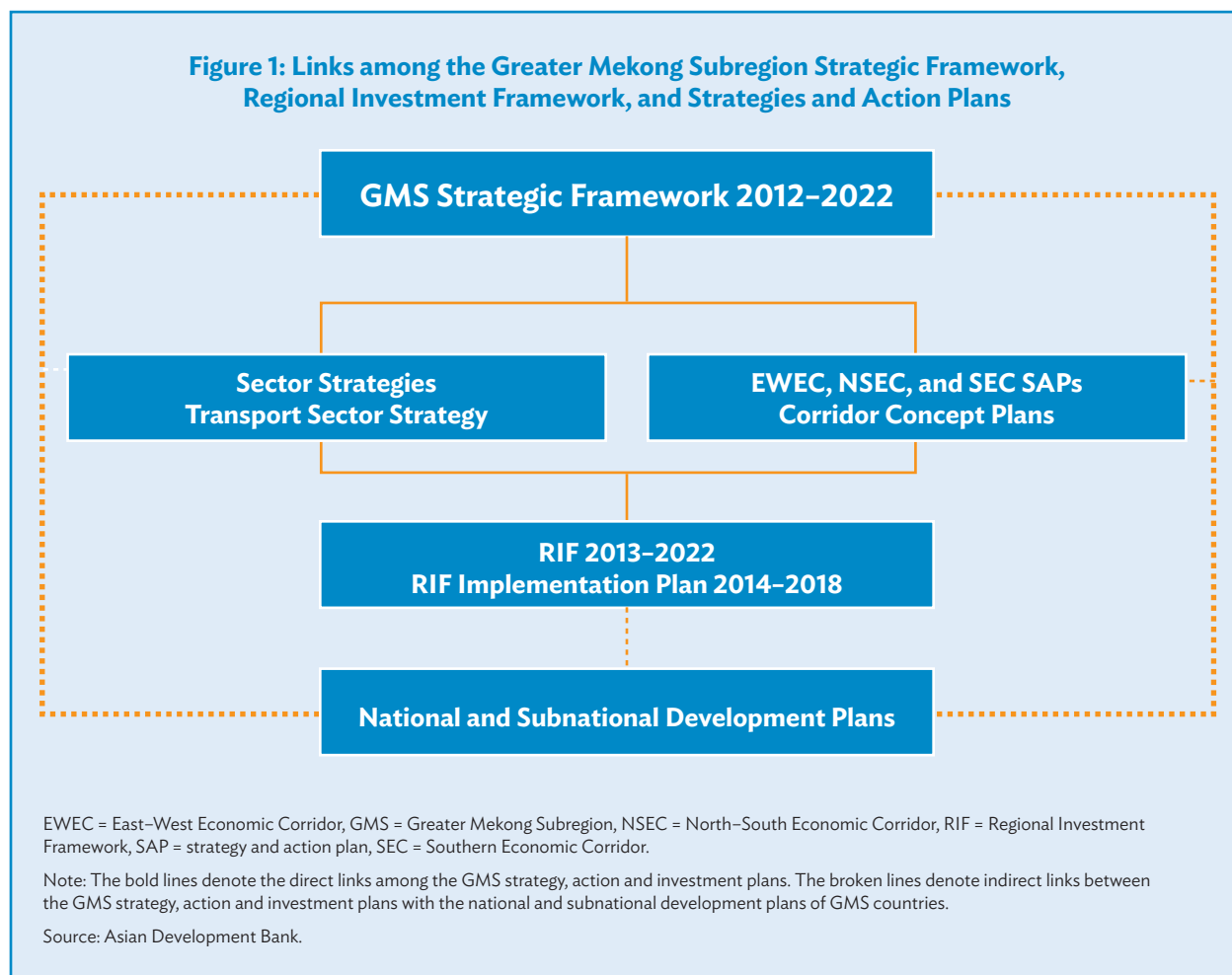
<sup>8</sup> ADB. 2013. *Greater Mekong Subregion Economic Cooperation Program: Overview of the GMS Regional Investment Framework (2013–2022)*. Paper prepared for the 19th GMS Ministerial Conference. Vientiane, Lao People’s Democratic Republic. 10–11 December.

<sup>9</sup> Footnote 6 (ADB 2016). RIF-IP 2020 has been updated and rolled over to cover the period up to 2022. The resulting document, RIF 2022, consolidates and expands the project pipeline in RIF 2013–2022 and RIF-IP 2020.

project pipeline. The transport and transport-related projects in the RIF-IPs will essentially become a by-product of TSS 2030. Figure 1 shows the links among the GMS-SF, transport sector strategies, economic corridor strategies and action plans, RIF and RIF-IP, and national and subnational development plans of the GMS countries.

The rest of this strategy document presents the main elements of TSS 2030. Section III sets the stage for TSS 2030 by reviewing past achievements and lessons that indicate the remaining issues and challenges of GMS transport development. Section IV identifies important changes in the internal and external environments in which GMS transport development takes place and discusses

their implications on GMS strategies and programs for the development of the sector. Section V sets forth the building blocks of TSS 2030 including its long-term vision, the strategic thrusts necessary to achieve this vision, the crosscutting concerns that affect all facets of the strategy, and priority measures that should be taken to operationalize the strategic thrusts. Section VI determines the steps needed to implement the strategy, including translating the strategy into an action program; ways of financing projects; and strengthening institutional mechanisms and arrangements. Lastly, Section VII proposes a scheme for monitoring and assessing the progress in implementing TSS 2030 based on a results framework initially covering 2018–2022.





### III. ACHIEVEMENTS AND LESSONS LEARNED: THE UNFINISHED AGENDA

Bangkok Mass Transit System. The Skytrain, also known as the BTS in Thailand, running above a street congested with vehicles (photo by Zen Nuntawinyu).

This section provides a perspective of the unfinished agenda of GMS transport development by reviewing past achievements and lessons in developing the GMS transport system. TSS 2030 will build on these achievements and use the lessons gained from experience to guide future approaches and initiatives.

An initial review of TSS 2015 (hereinafter Initial Review) was conducted in 2014 to assess the relevance, effectiveness, efficiency, sustainability, and development impact of its strategic goals.<sup>10</sup> A comprehensive evaluation of TSS 2015 was not undertaken after the Initial Review, so the account in this section is based on, besides the Initial Review, (i) the summaries of proceedings of the GMS Subregional Transport Forum during 2007–2016 and assessments conducted during 2008–2017, particularly the assessment of road transport infrastructure and logistics services in the GMS prepared in 2012 as part of the RIF exercise (hereinafter the 2012 Assessment); and (ii) the sector assistance program evaluation (SAPE) of transport and trade facilitation (TTF) in the GMS conducted in 2008.<sup>11</sup> Although the SAPE covered only the initial period of TSS 2015, some of its findings remain relevant.

TSS 2015 broadened the focus of GMS transport development. Whereas the initial concern of GMS transport development was to establish links and enable cross-border traffic, TSS 2015 focused on the need to improve the efficiency and expand the capacity of the GMS transport system to meet increasing demand. With a long-term vision of **achieving seamless transport services on a fully connected and integrated GMS transport network**, it laid down five interrelated goals:

- exploit synergies in the GMS transport system (enhance impact through cooperation);
- move toward an open market and open borders for transport services (facilitate cross-border movement of people, goods, and vehicles);
- improve economic efficiency to reduce transport costs;
- complete the GMS transport network and improve links with South Asia; and
- encourage use of different modes of transport.

The Initial Review evaluated the performance of TSS 2015 with respect to each of these goals. It concluded that although progress was made on all of them, performance was mixed (Table 1). Progress

<sup>10</sup> ADB. 2014. *Initial Review of the Greater Mekong Subregion Transport Sector Strategy 2006–2015*. Manila.

<sup>11</sup> ADB. 2012. *Initial Assessments of Road Transport Infrastructure and Transport and Logistic Services for Trade Facilitation in the GMS Countries*. Paper prepared for the 18th GMS Ministerial Conference. People's Republic of China. 11–12 December; and Independent Evaluation Department. 2008. *Sector Assistance Program Evaluation: Transport and Trade Facilitation in the Greater Mekong Subregion—Time to Shift Gears*. Manila: ADB.

in exploiting synergies and completing the GMS transport network was found to be significant, while efforts to establish an open market for transport services, improve efficiency, and encourage multimodalism were observed to be lagging. These conclusions parallel those of the SAPE and 2012 Assessment, which indicated the need for greater attention to the software aspects of transport development.

The key findings of the assessments of GMS transport sector cooperation in general and TSS 2015 in particular are summarized below:

- The main achievement of GMS transport cooperation has been the substantial improvement in physical connectivity among the GMS countries, with the road transport projects in the EWEC, the NSEC, and the SEC having been completed or nearing completion. Nevertheless, there are still some missing links and bottlenecks that need to be addressed. Appendix 1 lists the completed and ongoing GMS transport projects in the EWEC, the NSEC, and the SEC.
- Implementation of all 36 priority transport investment projects under TSS 2015 has been substantially completed or is ongoing. The transport sector was one of the leading performers in implementing projects under the strategies and action plans for the EWEC, the NSEC, and the SEC, with about 85% of projects in the action plans being completed or implemented by 2015.<sup>12</sup>
- Transport sector projects in the RIF-IP for 2014–2018 were progressing relatively well as of the end of 2015, the second year of the RIF-IP. Of the 42 transport investment projects in the RIF-IP, 2 projects had been completed, 13 projects were being implemented, and feasibility studies for 14 projects had commenced.<sup>13</sup>
- The completion of major road transport projects is generating benefits, especially in border areas and corridor towns and cities, in terms of reduction in cost and time of travel, savings in vehicle operating costs, growth in cross-border trade, and increasing economic opportunities.
- As GMS transport development moves from construction to operation, it will be necessary to place more emphasis on the maintenance of transport infrastructure, more specifically road maintenance.
- Despite some recent progress, implementation of the CBTA has been much slower and has proven to be more difficult than expected. Implementation needs to be accelerated with sustained and concerted efforts to realize the full benefits of improved physical connectivity. It is also necessary to ensure that CBTA provisions keep pace with dynamic changes in the region's business model.
- TSS 2015 did not consider social and environmental concerns involving GMS transport projects. It is important to recognize and address these issues, as some of the negative impacts

**Table 1: Initial Review of the Greater Mekong Subregion Transport Sector Study 2006–2015: Summary of Assessment**

Overarching Goals	Overall Rating <sup>a</sup>
1. Exploit synergies in the GMS transport system	Successful
2. Move toward an open market for transport services	Partly successful
3. Facilitate economic efficiency to reduce transport costs	Successful
4. Complete the GMS transport network and improve links with South Asia	Highly successful
5. Encourage multimodalism	Partly successful

GMS = Greater Mekong Subregion.

<sup>a</sup> The overall rating is based on a weighted average score of relevance, efficiency, effectiveness, sustainability, and development impact.

Source: Asian Development Bank. 2014. *Initial Review of the Greater Mekong Subregion Transport Sector Strategy 2006–2015*. Manila.

<sup>12</sup> ADB. 2015. *Revisiting the GMS Economic Corridor Strategies and Action Plans*. Paper prepared for the 7th Economic Corridor Forum. People's Republic of China.

<sup>13</sup> ADB. Regional Investment Framework Implementation Plan: Second Progress Report (as of 31 December 2015). Unpublished.

of completed transport projects are already being felt.

- Monitoring of progress toward the goals of GMS transport and economic corridor development has been inadequate. Although outputs in terms of the number of projects implemented are available, outcomes in terms of increased volume of cross-border trade and traffic, and time and cost of travel are not regularly measured and compiled.<sup>14</sup>

The lessons from experience in GMS cooperation in the transport sector that have important implications for TSS 2030 are as follows:

- GMS cooperation in the transport sector has catalyzed collective action to strengthen connectivity among neighboring countries. However, subregional initiatives in the sector should evolve to reflect the changing environment.
- There is substantial scope for expanding the participation of the private sector in the planning, financing, and operation and maintenance of GMS transport projects. Suitable approaches should be pursued to effectively increase such participation beyond that of an outside observer or commentator.
- Policy and regulatory reforms needed to facilitate cross-border transport and trade are more difficult to implement than infrastructure projects. They require patience and persistence, more time and effort, and more intensive policy dialogue and follow-up. The Asian Development Bank (ADB) needs to play a greater role in the policy dialogue.
- The signing and ratification of agreements do not automatically lead to implementation. Institutional and capacity gaps should be identified, and measures should be taken to address these gaps to ensure timely and effective implementation of agreements.
- Overambitious road maps and action plans lead to unnecessarily high expectations that, if not fulfilled, can lead to loss of commitment and momentum. Activities, outputs, targets, and time lines need to be set realistically considering capacity and resource constraints.
- The proliferation of subregional frameworks involving GMS countries and wide disparities in capacities for coordinating these frameworks could result in lack of focus, duplication of efforts, and inconsistencies in subregional initiatives. The role of national and subregional focal points will be important in ensuring coordination across subregional programs.
- As in other regional and subregional cooperation programs, the distribution of costs and benefits is an important consideration. Due to the small population, level of development, and location of Cambodia and the Lao People's Democratic Republic (Lao PDR) between two or more GMS countries with much larger markets, the corridors in their territories could become mainly a transit point for trade among their neighboring countries. Mutually acceptable cost-sharing mechanisms should be considered to address this issue.

<sup>14</sup> A time-release study was conducted in 2014 covering Cambodia, the Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam, which could serve as a benchmark for tracking progress, but there was no follow-up study. See ADB and Government of Japan, Japan Fund for Poverty Reduction. Compendium of Country Time Release Study Reports. Unpublished.



## IV. EVOLVING ENVIRONMENT FOR GREATER MEKONG SUBREGION TRANSPORT DEVELOPMENT

A view of National Highway No. 12. The highway links Thailand from east to west, benefiting not only local provinces but also border areas in neighboring countries. (photo by Zen Nuntawinyu).

There have been many developments in the internal and external environments within which GMS cooperation in the transport sector takes place. Although these developments pose challenges, they also open up opportunities for the GMS countries, individually and collectively.<sup>15</sup> The developments that are considered to be of more direct and proximate significance to GMS transport cooperation include the (i) opening up of Myanmar; (ii) launching of the Association of Southeast Asian Nations (ASEAN) Economic Community in 2015 and adoption of ASEAN 2025: Forging Ahead Together, which embodies ASEAN's agenda for continuing cooperation toward full ASEAN integration; (iii) initiation of the Belt and Road Initiative and the associated commitment of sizable funds by the People's Republic of China (PRC) for infrastructure;<sup>16</sup> and (iv) growing number of regional cooperation and integration initiatives in Asia and its subregions.

Although these developments have varying influences on the GMS, all of them require the subregion to be more competitive to maximize the benefits of wider regional links and cooperation. In turn, to enhance competitiveness, it will be necessary to strengthen

GMS connectivity in terms of both hardware and software. GMS transport cooperation needs to be more effective and pragmatic in dealing with multi-country and cross-border concerns involving the transport sector.

**Opening up of Myanmar.** Myanmar is strategically located, serving as a land bridge between Southeast Asia and South Asia, and between the PRC and South Asia. Its opening up has vastly improved the prospects for increased trade and investment among these regions, and between Myanmar and the other GMS countries. The EWEC's potential can be fully realized with the extension and expansion of its sections in Myanmar. The land route through Myanmar can provide the PRC with an alternative route for its trade with South Asia, which is being conducted mainly by sea around the Strait of Malacca. More efforts are necessary to address the bottlenecks in the Myanmar component of the EWEC and the NSEC.

**Agenda toward full ASEAN integration under ASEAN 2025.** The Master Plan on ASEAN Connectivity 2025, which succeeded the Master Plan on ASEAN Connectivity 2010, is intended to guide actions to improve physical, institutional, and people-

<sup>15</sup> Detailed accounts of the global and regional context of GMS development can be found in ADB. 2011. *The Greater Mekong Subregion Economic Cooperation Program Strategic Framework 2012–2022*. Manila; and ADB. 2016. *Study on Strengthening the Greater Mekong Subregion Program's Institutional Framework*. Paper prepared for the 21st GMS Ministerial Conference. Chiang Rai, Thailand. 30 November–1 December.

<sup>16</sup> The People's Republic of China pledged financial assistance for Belt and Road Initiative projects during the Belt and Road Forum for International Cooperation held in Beijing on 14–15 May 2017.

<sup>17</sup> ASEAN. 2016. *Master Plan on ASEAN Connectivity 2025*. Jakarta.

to-people links in the region.<sup>17</sup> Its program of action on physical connectivity involves continuing cooperation among member states in transport, energy, and information and communication technology. In turn, the ASEAN Transport Strategic Plan, or Kuala Lumpur Transport Strategic Plan, serves as a guiding regional policy document covering air transport, land transport, maritime transport, sustainable transport, and transport facilitation.<sup>18</sup> Because all GMS countries are members of ASEAN, except the PRC, it is essential that GMS transport development is continuously and closely coordinated with ASEAN in terms of strategy, programs, and measures to ensure consistency and complementarity.<sup>19</sup>

**Belt and Road Initiative.** The Belt and Road Initiative was launched by the PRC to promote and expand connectivity and cooperation among the PRC, Southeast Asia, South Asia, Central Asia, Europe, and Africa. It has two components: the Silk Road Economic Belt and the Maritime Silk Road. The Silk Road Economic Belt consists of six corridors, two of which involve one or more GMS countries: (i) the PRC–Indochina Peninsula Corridor, running from southern PRC to Singapore; and (ii) the Bangladesh–PRC–India–Myanmar Corridor, running from southern PRC to India. The Belt and Road Initiative has expanded potential financing sources for priority GMS transport projects, including from the Asian Infrastructure Investment Bank.<sup>20</sup> Pursuing such new funding opportunities will require the strengthening of institutional capacity and individual expertise in the

planning, preparation, and implementation of GMS transport programs and projects. Follow-up actions of the Joint Communiqué of the Leaders Roundtable of the Belt and Road Forum for International Cooperation will be considered to promote practical cooperation on roads, railways, ports, maritime and inland water transport, and aviation among GMS countries.

**Growing number of regional cooperation and integration initiatives.** Besides ASEAN, there are several other regional and subregional initiatives that involve all or subsets of GMS countries. Examples include the Cambodia–Lao PDR–Viet Nam Development Triangle Area, the Lower Mekong Initiative, the Indonesia–Malaysia–Thailand Growth Triangle, the Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy, the Mekong River Commission, the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, the Mekong–Ganga Cooperation, and the Lancang–Mekong Cooperation. The Strategic Plan for ASEAN–China Transport Cooperation was adopted by the 15th ASEAN and China Transport Ministers Meeting. These initiatives provide avenues for increased cooperation on issues facing the region and subregion. However, they also require more institutional resources, which may already be stretched in some countries. Because cooperation in the transport sector is a common component of most of these initiatives, close coordination with the GMS is essential to promote synergy and ensure consistency.

<sup>18</sup> ASEAN. 2015. *Kuala Lumpur Transport Strategic Plan (ASEAN Transport Strategic Plan) 2016–2025*. Jakarta.

<sup>19</sup> Specific proposals for strengthening links and coordination between the GMS and ASEAN are in ADB. 2013. *Regional and Subregional Program Links: Mapping the Links between ASEAN and the GMS, BIMP-EAGA, and IMT-GT*. Manila.

<sup>20</sup> Asian Infrastructure Investment Bank. <https://www.aiib.org/en/index.html>.





## V. STRATEGIC FRAMEWORK

Water transport. Commuters cross from downtown Yangon to Dala Township, which is at the southern bank of the Yangon River (photo by Eric Sales/ADB).

**T**he building blocks of TSS 2030 consist of its long-term vision; strategic thrusts; crosscutting concerns; operational priorities; and implementation, monitoring, and evaluation. These are summarized in Figure 2.

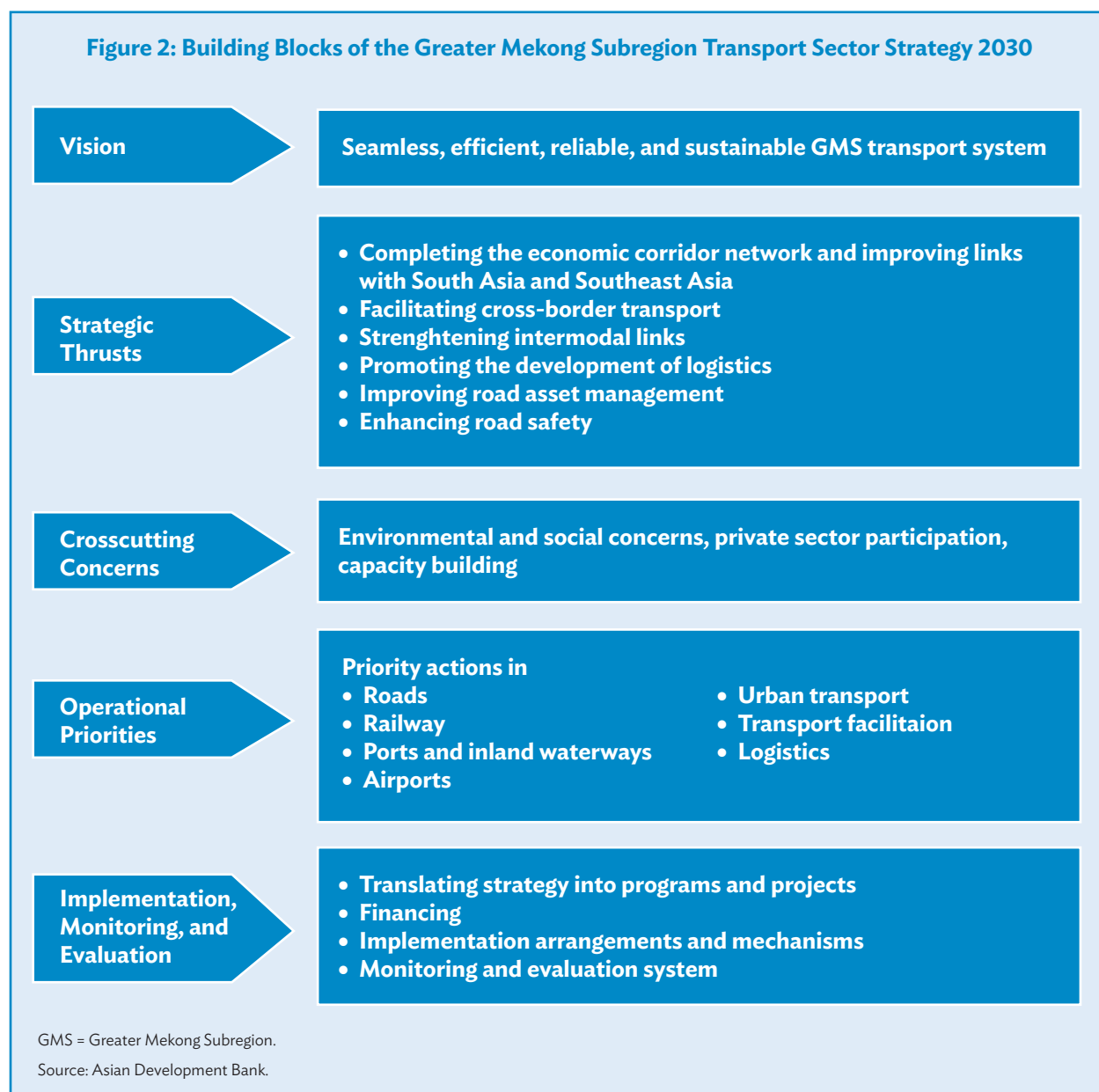
### A. Long-Term Vision

The long-term vision of TSS 2030 is a seamless, efficient, reliable, and sustainable GMS transport system. This maintains the substance of the vision articulated in TSS 2015 with the addition of “efficient,” “reliable,” and “sustainable” as desired characteristics of the sector. “Transport network” in TSS 2015 is replaced by “transport system” in TSS 2030 to emphasize the hardware and software aspects of GMS transport development. “Seamless” connotes being fully connected and integrated, with travel being unimpeded across the transport network. Besides being seamless, the transport system must also be efficient to reduce costs, and reliable and sustainable to function well continuously and consistently. Reliability in turn requires high-quality transport infrastructure, consistent application of transport and transport-related regulations and standards, and adequate safety regimes. These attributes will enable the GMS transport system to effectively contribute toward the GMS vision of an integrated, prosperous, and harmonious subregion.

### B. Strategic Thrusts

To achieve the long-term vision of TSS 2030, the following strategic thrusts will serve as the foundation of the strategy: (i) completing the GMS transport corridor network and improving links with South Asia and Southeast Asia, (ii) facilitating cross-border transport, (iii) strengthening intermodal transport links, (iv) promoting the development of logistics, (v) improving road asset management, and (vi) enhancing road safety.

The spatial focus of these strategic thrusts will primarily be on the GMS transport corridor network. The corridor approach has been used in the GMS as a planning tool to ensure that major cities and urban centers, border nodes, maritime gateways, key industrial hubs, and major trade routes are linked and integrated into the transport corridor network. TSS 2015 identified nine transport corridors, with the EWEC, the NSEC, and the SEC being subsets of these corridors. The three economic corridors were prioritized to transform the transport corridors into economic corridors. Unlike transport corridors, which follow a single route, economic corridors encompass an economic zone running parallel to the main transport artery, and attract investments along and around their main routes. Thus, besides giving priority to transport investments along the EWEC, the NSEC, and the SEC, complementary efforts such as TTF, border and corridor town development, and



investment promotion have been largely focused on these economic corridors.

The configuration of the GMS economic corridors was reviewed in 2016 to ensure that (i) the opening up of Myanmar is taken into account, (ii) there is a close match between corridor routes and

trade flows, (iii) GMS capitals and major urban centers are connected to each other, and (iv) the corridors are linked with maritime gateways.<sup>21</sup> The GMS ministers endorsed the recommended changes in corridor configuration at the 21st GMS Ministerial Conference held in Chiang Rai, Thailand on 30 November–1 December 2016 (Figure 3).

<sup>21</sup> ADB. 2018. *Review of Configuration of the Greater Mekong Subregion Economic Corridors*. Manila. <https://www.adb.org/documents/review-configuration-gms-corridors>. The evolution of, and differences between, transport corridors and economic corridors, and the reasons for the alignment and extension of the corridors are discussed in detail in this report.

**Figure 3: New Configuration of the East–West Economic Corridor, the North–South Economic Corridor, and the Southern Economic Corridor**



Source: ADB. 2018. *Review of Configuration of the Greater Mekong Subregion Economic Corridors*. Manila. <https://www.adb.org/documents/review-configuration-gms-corridors>.

The transport corridors that comprise the EWEC, the NSEC, and the SEC after their reconfiguration are listed in Appendix 2.<sup>22</sup>

### Completing the Greater Mekong Subregion Transport Corridor Network and Improving Links with South Asia and Southeast Asia

Strictly speaking, there are no longer any missing links in the GMS corridor network. “Completing” the GMS transport network therefore refers to upgrading, rehabilitating, or building of new alignments to address bottlenecks along the corridors.<sup>23</sup> The road improvement projects under the original configuration of the EWEC, the NSEC, and the SEC have been completed, except for some sections of the EWEC in Myanmar and the SEC in Cambodia. Future efforts will focus on upgrading or rehabilitating (i) the remaining gaps in the original alignment of the EWEC and the SEC, and (ii) new sections particularly in the Lao PDR and Myanmar to address bottlenecks under the realigned and expanded corridors.

An assessment of the state of development of GMS corridors focusing on transport infrastructure along each of the corridors is being conducted. Although the emphasis is on road transport, it also covers related rail and inland waterways. The assessment will provide detailed information on the physical condition of transport infrastructure; identify where the gaps are in terms of required upgrading, rehabilitation, and maintenance; and suggest priority interventions to address remaining bottlenecks in each of the corridors. It will help guide future investments aimed at completing the GMS transport corridor network.

The route linking Mandalay to Tamu at the border with India was added to the NSEC to strengthen the

link to South Asia. This is part of the India–Myanmar–Thailand Trilateral Highway Project linking India to Thailand through Myanmar. Upgrading of this route will be undertaken in conjunction with the Trilateral Highway Project, which extends from Moreh, Manipur, in India to Mae Sot, Thailand.<sup>24</sup> Connectivity between the GMS and the rest of Southeast Asia will be strengthened by promoting links between the GMS and ASEAN, Indonesia–Malaysia–Thailand Growth Triangle, and the Brunei Darussalam–Indonesia–Malaysia–Philippines East ASEAN Growth Area.<sup>25</sup>

### Facilitating Cross-Border Transport

Opening markets and borders for transport services, as exemplified by the European Union, was one of the strategic goals of TSS 2015. This long-term goal is still relevant and appropriate, especially in the light of the launching of the ASEAN Economic Community in 2015, which envisions a single market and production base where goods, services, investment, capital, and skilled labor flow freely.<sup>26</sup> The GMS countries have taken a gradual approach toward this goal, with the principal instrument being the Cross-Border Transport Facilitation Agreement (CBTA).<sup>27</sup> The CBTA aims to promote the free movement of goods, vehicles, and people within the GMS so that (i) trucks, drivers, and goods can go to any GMS country; (ii) trucks with goods can transit any GMS country without reloading or transloading; (iii) clearance times at border crossings are reduced through coordinated border management; and (iv) institutional coordination among agencies at and behind the borders is improved.

Some progress has been made in implementing the CBTA. However, due to technical, legal, institutional, physical capacity, and coordination issues, progress has fallen short of expectations. Prior to its full

<sup>22</sup> The major changes in the original alignment involve the section linking Myawaddy to Yangon–Thilawa in Myanmar and the section involving Route No. 12 in the Lao PDR connecting to Vung Anh, Vinh, and Ha Noi in Viet Nam.

<sup>23</sup> ADB Institute. 2015. *Connecting South Asia and Southeast Asia*. Tokyo. This publication analyzes how cooperation between South Asia and Southeast Asia can provide mutual benefits and concludes that improving transport connectivity is the crucial building block to economic integration of the two regions.

<sup>24</sup> The 130-kilometer section from Tamu to Kalewa has been completed under this project. ADB will be providing assistance to India in upgrading a section of Asian Highway 2 in northeast India connecting to the Trilateral Highway in Myanmar and Thailand.

<sup>25</sup> The Indonesia–Malaysia–Thailand Growth Triangle comprises 14 provinces in southern Thailand; 8 states in Peninsular Malaysia; and 10 provinces in Sumatra, Indonesia. The Brunei Darussalam–Indonesia–Malaysia–Philippines East ASEAN Growth Area is made up of Brunei Darussalam; nine provinces in Kalimantan and Sulawesi, the island chain of Maluku, and Irian Jaya (Indonesia); Sabah, Sarawak, and Labuan (Malaysia); and the entire island of Mindanao and the island province of Palawan (Philippines).

<sup>26</sup> The *Declaration on the ASEAN Economic Community Blueprint* was signed on 20 November 2007 in Singapore.

<sup>27</sup> ADB. 2011. *Greater Mekong Subregion Cross-Border Transport Facilitation Agreement: Instruments and Drafting History*. Manila.

ratification in 2015, several bilateral and trilateral memorandums of understanding have been entered into involving partial implementation of the CBTA.<sup>28</sup> Initial implementation of the single-stop inspection scheme has been undertaken in Lao Bao–Dansavanh and Mukdahan–Savannakhet, and of the single-window inspection scheme in Hekou–Lao Cai. More recently, the GMS countries launched the “early harvest” implementation of the CBTA whereby up to 500 GMS road transport permits would be issued by all countries in 2017, except for Myanmar, which is expected to do so 24 months after the effectivity of the early harvest scheme. The key milestones in the evolution of the CBTA are shown in Appendix 3.

Much work still needs to be undertaken before the CBTA can make a significant impact on the openness of borders. Border crossings remain the weakest links in the economic corridors in terms of time and costs, with improvements in physical infrastructure outpacing the implementation of TTF measures. TSS 2030’s strategic thrust is therefore to facilitate cross-border transport by accelerating and enhancing the effectiveness of CBTA implementation and ensuring its relevance to the current business model. This will be done in close coordination with ongoing trade facilitation efforts in the GMS.<sup>29</sup>

### Strengthening Intermodal Transport Links

TSS 2015 specified two approaches to multimodalism in the GMS: (i) encouraging the provision of, and promoting competition between, different modes of transport on a given route or corridor; and (ii) facilitating intermodal transport, i.e., establishing good connections between different modes of transport. As of 2017, modal competition in the GMS is still very limited and is likely to remain so over the next 10 years. In most cases, the different modes of transport in the GMS complement, rather

than compete with, each other (footnote 10). For example, maritime transport dominates trade, accounting for 90% of overall GMS trade and 70% of intra-GMS trade. The road subsector dominates land transport for passenger traffic and collection and distribution services for ports-based trade. Rail transport is underutilized due to the limited network and lack of international links. Inland waterways are underdeveloped in terms of support facilities and services, and therefore cannot compete with road and rail transport.

The focus of TSS 2030 is thus to strengthen the links between modes through the development of intermodal links, e.g., by improving port–highway–railway connections, rather than promoting competition between modes per se. At the same time, TSS 2030 will promote investment in rail and inland waterways to increase their role and utilization in combination with other modes of transport in the GMS.<sup>30</sup> An open and competitive transport market is envisioned to evolve with expanded and improved rail and inland waterway infrastructure and services.

### Promoting Logistics Development

Transport and logistics are sometimes regarded as being synonymous. However, as its concept has evolved over time, logistics no longer involves only the physical movement of goods. It refers to the entire process of planning and managing the flow of goods from the point of origin to the end user, and integrating transport, warehousing, storage, freight forwarding, and information and communication services to meet the requirements of customers.<sup>31</sup> Thus, logistics development requires a broader approach than transport infrastructure development and transport facilitation alone. It involves four components: (i) transport and communications infrastructure; (ii) shippers, traders, and consignees; (iii) public and

<sup>28</sup> Examples include PRC–Viet Nam, PRC–Lao PDR, Thailand–Cambodia, Thailand–Lao PDR, Cambodia–Viet Nam, Viet Nam–Lao PDR, and Thailand–Lao PDR–Viet Nam.

<sup>29</sup> The GMS TTF Action Program is supported by the Governments of Australia, Japan, and the United States, as well as by the European Union and multilateral agencies such as the World Bank, the World Customs Organization, the World Trade Organization, and the Economic and Social Commission for Asia and the Pacific. The program integrates advisory support and capacity building for TTF in the GMS, building on the progress made under the CBTA.

<sup>30</sup> ADB. 2010. *Connecting Greater Mekong Subregion Railways: A Strategic Framework*. Manila.

<sup>31</sup> ADB. 2012. *Transport Efficiency through Logistics Development: Policy Study*. Manila; Banomyong, R. 2008. Logistics Development in the North–South Economic Corridor of the Greater Mekong Subregion. *Journal of Greater Mekong Subregion Development Studies*. 4. pp. 43–58; and ADB. 2016. *Knowledge Development Support for Southeast Asia: Study on GMS Logistics (Components 1–3)*. Consultant’s report. Manila (TA 8977-REG).

private service providers; and (iv) policy, regulatory, and institutional frameworks. The performance of the logistics system in terms of cost, efficiency, reliability, and security depends on the interactions among these components.

Viewed from this perspective, it is clear that transport infrastructure and transport facilitation in the GMS are necessary but not sufficient to enable the transport sector to effectively contribute to the growth of trade and investment and overall development in the subregion. Logistics development needs to be part of the strategic agenda, with transport being a core and integral component. Logistics is primarily demand driven, so logistics service providers adjust and develop their services to satisfy the requirements of customers. The role of the government is to provide the physical, policy, regulatory, and institutional frameworks within which the logistics industry can develop and function according to the demands of the market.

Along these lines, TSS 2030 includes the promotion of logistics development as a strategic thrust to complement transport infrastructure and transport facilitation, centering on (i) encouraging investment in transport-related and value-adding facilities such as logistics hubs, inland container depots (ICDs), inland dry ports, and cold storage complexes; (ii) fostering closer interface between the public and private sectors at subregional and national levels, such as the GMS Freight Transport Association (FRETA) and various national industry associations; and (iii) helping develop human resources in the logistics industry.

### Improving Asset Management

Asset management is necessary for all modes of transport. However, the emphasis of TSS 2030 is on the road subsector, as it is the predominant mode of transport and road maintenance is an urgent issue. Regular and proper maintenance of transport networks is essential to ensure their efficiency, reliability, and sustainability. This is particularly true in the GMS, where common standards of road maintenance covering many sections in different

countries are necessary for the entire corridor network to effectively provide the expected level of service. Besides this basic need, the completion of many GMS road projects, especially in the last 10 years, has also necessitated that more attention is given to road maintenance. Inadequate road maintenance may lead to weak links along the GMS corridors, higher rehabilitation costs, and a shorter life of road transport assets.

TSS 2030 envisions a collaborative approach to improving road asset management in the GMS that addresses the following concerns: (i) securing adequate financing for road maintenance (e.g., through increased budgetary support, road user charges, and toll roads); (ii) enhancing road management systems (e.g., survey of road conditions, prioritization of maintenance works, record keeping and databases, and preparation and implementation of optimal road maintenance plans); (iii) improving the conduct of road maintenance works (e.g., subcontracting versus force account, use of public-private partnership (PPP) arrangements, and application of modern technology); and (iv) strengthening implementation of vehicle and axle overload control systems.

### Enhancing Safety

Enhancing safety is also important for all modes of transport. The emphasis of TSS 2030 on road safety is due to the magnitude and growing incidence of road crashes in the subregion. Economic progress and population growth in the GMS have spurred a rapid growth in the number of vehicles and motorcycles, which has in turn led to the deterioration of the road safety situation in the subregion. Estimates indicated that in ASEAN, of which all GMS countries except the PRC are members, more than 75,000 people die and more than 4.7 million are injured annually in road crashes, costing the region about \$15 billion.<sup>32</sup> The problem is exacerbated by the very high percentage of motorcycles among all vehicles on roads, especially in Viet Nam with 95%, the Lao PDR with 82%, and Cambodia with 78%. In general, increasing demand for transport services stemming from economic

<sup>32</sup> ADB. 2005. *Arrive Alive: ASEAN Commits to Cutting Road Deaths: Association of Southeast Asian Nations Regional Road Safety Strategy and Action Plan (2005-2010)*. Manila.

development have far exceeded each country's capacity for safety education and legal enforcement. This has been a key contributing factor to inadequate road safety and the increasing incidence of road crashes in the subregion.

The GMS transport system needs to be safe to achieve a good level of efficiency, reliability, and sustainability across the territories of member countries. This requires common standards of safety in different national components of GMS corridors, which can be realized more effectively through cooperation among the GMS countries. To enhance road safety in the GMS, TSS 2030 will complement and build on related initiatives in ASEAN, under which ASEAN member states developed national road safety action plans and identified steps to carry them out.<sup>33</sup> More specifically, TSS 2030 will help (i) coordinate and harmonize road safety activities in the subregion; (ii) enhance road safety management capacity; (iii) ensure that road safety considerations are incorporated in the design, construction, and operation and maintenance of road transport infrastructure; and (iv) establish and maintain road safety performance data and measures. In pursuing these measures, it will be useful to bear in mind that about 90% of crashes are caused by road user behavior (this is also true in the more advanced economies), so ultimately, sustained long-term improvements in education and enforcement are the only solutions.

## C. Crosscutting Concerns

### Social and Environmental Concerns

Although the GMS transport development is expected to bring benefits, negative consequences have emerged that need to be addressed.<sup>34</sup> These include the following:

- **Displacement of local communities and ethnic minorities.** Many subregional infrastructure projects require the relocation and resettlement of local inhabitants, resulting in their displacement and changes in their economic, social, and cultural environment.
- **Spread of communicable diseases.** The increased mobility of people arising from improvements in physical connectivity could lead to the spread of communicable diseases such as HIV/AIDS and avian influenza.
- **Trafficking of women and children and illegal trade.** Improved mobility and access may exacerbate the trafficking of women and children in border areas. Activities involving illegal trade in goods and wildlife could also increase.
- **Increasing land prices.** Land prices around road construction sites tend to rise due to speculation and expected increase in demand, making small landowners vulnerable.
- **Increasing incidence of road crashes.** Road construction and expansion along the corridors could result in increased road crashes and loss of life and property.
- **Deforestation and loss of biodiversity.** Increased mobility of people and goods may create opportunities for the rapid exploitation of natural resources along the corridors.
- **Environmental degradation.** Expanding economic activities facilitated by improved transport services could lead to pollution and waste disposal issues along the corridors.

Environmental concerns in the GMS involve not only the negative impact of infrastructure projects but also the issues that affect the subregion's overall sustainability, in particular the effects of climate change. Transport infrastructure is vulnerable to climate change, which is manifested in the changing frequency and intensity of extreme weather conditions, rising sea level, increasing temperature, and shifting rainfall patterns.<sup>35</sup> These risks can adversely affect the condition, operation, and safety of roads, bridges, ports, airports, and other transport facilities, and consequently the movement of people, goods, and services within and across GMS countries.

Thus, in addition to addressing the potential negative social and environmental impact of transport projects, GMS transport development also needs to take measures to mitigate as well as adapt to climate change. These measures include promoting

<sup>33</sup> ADB. 2012. *Technical Assistance for Improving Road Safety in the Association of Southeast Asian Nations*. Manila.

<sup>34</sup> Mekong Institute. 2006. *Papers and Proceedings of the Second Regional Policy Formulation Meeting on Social and Environmental Impacts of Economic Corridors*. Khon Kaen, Thailand. 18–20 September.

<sup>35</sup> ADB. 2014. *Climate Proofing ADB Investment in the Transport Sector: Initial Experience*. Manila.

environment-friendly transport infrastructure and services, ensuring the resiliency of vulnerable transport projects to climate change, and establishing disaster risk management and emergency response mechanisms. Dealing with these concerns necessitates their full consideration in the planning, design, and implementation of GMS transport projects.

### Private Sector Participation

Besides being the primary users of transport infrastructure and services, the private sector is also involved in the provision of transport services and, in some instances, in the financing, construction, and operation of transport infrastructure. Accordingly, private sector participation is essential in all aspects of transport development. Although this is widely recognized, assessments of transport initiatives in the GMS have concluded that private sector participation has been inadequate. One reason for this situation may be the slow implementation of TTF measures, which has led to the strong initial interest of the private sector not being sustained as progress fell far behind expectations. Another reason—related to the first—may be the lack of a strong institutional platform for increasing private sector participation.

Admittedly, the GMS Program has established institutional mechanisms to promote private sector participation, more specifically the GMS Business Forum (renamed the GMS Business Council) in 2000 and FRETA in 2012. FRETA was expected to help strengthen the transport industry and to enable the private sector to have a voice in the design and implementation of TTF measures in the subregion. However, its activities have been constrained by a lack of resources and narrow membership among service providers in the GMS (footnote 15). Promoting a more active and substantive participation of the private sector is therefore a major challenge to GMS transport development.

Representatives of the private sector have indicated that the best way to ensure their continuing involvement is for the GMS Program to demonstrate substantial progress in TTF, so that concrete benefits could be obtained from their participation. More generally, this implies that improving the regulatory environment will encourage more private sector investment and engagement. Besides accelerating

the implementation of TTF measures, the following actions are envisioned to help enhance cooperation between the public and private sectors in the development of the transport sector in the GMS:

- Strengthening FRETA so it can perform its functions effectively and continuously;
- expanding consultative mechanisms for the private sector's involvement in the design and implementation of transport sector programs and projects;
- helping improve the private sector's access to potential sources of financing, including through cofinancing and/or guarantee arrangements with and among financial institutions; and
- catalyzing private sector participation in transport projects through various PPP modalities.

### Capacity Building

The planning and implementation of GMS Program initiatives have been constrained by lack of technical and managerial skills. The GMS transport sector is no exception, especially in Cambodia, the Lao PDR, Myanmar, and, to a lesser extent, Viet Nam. These countries have addressed this problem by conducting training programs that they underwrite or carry out with technical assistance (TA) from bilateral and multilateral institutions. The PRC and Thailand have been helping in this regard by supporting capacity building projects in these countries. Training has been attached to or integrated into some transport projects.

The training needs of GMS transport development are diverse. Some involve general skills, while others require a considerable degree of specialization. Moreover, different skills are needed in road infrastructure, for example, compared with railways, port development, and logistics. Training programs should thus be tailor-made based on the training needs of the transport subsector or field of operation. Training needs assessment in areas such as logistics development, railway operations, border management, and use of modern technology will help in designing training programs that respond to actual needs. Closer coordination among the GMS countries in the planning and conduct of training programs in the transport sector will also be beneficial, as this will enable them to pool expertise and resources, cross-fertilize ideas and approaches, and gradually



move toward a common level of skills required for specific functions and activities. Initiatives aimed at improving the efficacy of capacity building efforts in the GMS transport sector will be part of the agenda of TSS 2030.

## **D. Operational Priorities**

To ensure that the strategic thrusts of TSS 2030 are reflected in GMS transport programs and projects, operational priorities are specified in the following transport subsectors and thematic areas: roads, railways, ports and inland waterways, air transport, urban transport, transport facilitation, and logistics. These operational priorities will be used as a basis for identifying and prioritizing GMS transport and transport-related projects to be proposed for incorporation in the RIF.

### **Roads**

- Upgrading sections requiring improvement in the original alignment of the EWEC in Myanmar and of the SEC in Cambodia.
- Upgrading the new routes in the EWEC and NSEC in Myanmar and the Lao PDR.
- Enhancing links to key transport interchange nodes, such as ports, airports, and rail stations.
- Improving links between secondary roads and main corridor routes.
- Establishing effective approaches to road asset management and financing.
- Implementing mechanisms for strengthening the implementation and coordination of road safety measures.
- Establishing a platform for data collection and performance monitoring.

### **Railway**

- Sustaining the operation of the Greater Mekong Railway Association (GMRA).
- Completing the missing railway links to interconnect the subregion.
- Upgrading and expanding the capacity of existing railway lines.

- Renewing and replacing rolling stock.
- Modernizing systems for train operation, user service, and management support.
- Improving asset management capacity.
- Enhancing cross-border rail transport.

### **Ports and Inland Waterways**

- Developing and/or increasing the capacity of major deep seaports.
- Promoting the use of coastal shipping and inland waterways for domestic and international trade by providing and improving support facilities and services.
- Improving landside seaport access.
- Improving port policies and regulations.
- Streamlining terminal and port operations.

### **Air Transport**

- Developing and/or improving secondary airports.
- Expanding existing international airports.
- Developing new international airports that may be designated as such in the future.

### **Urban Transport**

- Constructing circumferential and bypass roads around major urban centers along the corridors.
- Adopting mechanisms for coordinating transport programs and projects with the development plans of major cities and towns along the economic corridors.

### **Transport Facilitation**

- Facilitating the extension of traffic and transport rights along the GMS economic corridors.
- Upgrading border-crossing facilities.
- Improving border management.
- Enhancing institutional mechanisms for implementing transport facilitation measures at the central and local levels.
- Strengthening the interface between transport facilitation and trade facilitation initiatives.

- 
- Conducting capacity building programs to raise awareness, knowledge, and skills of central, local, and border officials in TTF.

### Logistics

- Improving road–rail–port connectivity.
- Establishing inland dry ports with road and rail interface.
- Establishing direct feeder services between ports and inland container depots, and integrating ICDs into the rail network.
- Promoting the logistics industry through deregulation and increased foreign participation.
- Encouraging investment in logistics hubs, ICDs, inland dry ports, and cold storage facilities.
- Improving the interface between the public and private sectors in logistics development, including through the strengthening of FRETA.
- Promoting human resource development programs to support GMS logistics development.
- Increasing use of information and communication technology in logistics management.



## VI. IMPLEMENTING THE STRATEGY

The Nhat Tan Bridge. Also called the Viet Nam–Japan Friendship Bridge, this 8.3-kilometer cable-stayed structure across the Red River connects the center of Ha Noi to the Noi Bai International Airport (photo by Gerhard Joren).

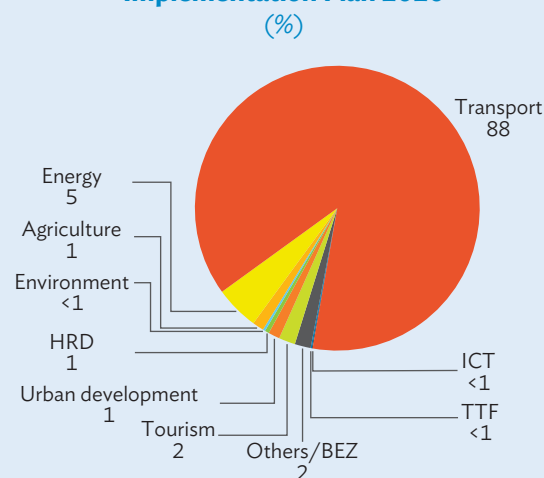
### A. Translating Strategy into Action

To operationalize TSS 2030, it will be necessary to translate its strategic thrusts and priorities into an action program consisting of transport projects that will be a component of the RIF. Accordingly, the identification and prioritization of GMS transport projects will be integrated into the RIF formulation process (Section II).

RIF-IP 2014–2018 contains a set of GMS projects that are of high priority for implementation, resource mobilization, and monitoring. It is a subset of the long list of GMS projects in RIF 2013–2022 covering transport, TTF, energy, environment, agriculture, human resource development, tourism, and urban development. RIF-IP is reviewed and updated regularly to ensure its continued relevance. A mid-term review of RIF-IP 2014–2018 was conducted in 2016, based on which RIF-IP was rolled over to 2020 (RIF-IP 2020). RIF-IP 2020 includes the original RIF-IP 2014–2018 pipeline and a few additional projects for implementation up to 2020. The investment projects in the transport sector account for the largest share (88%), of the estimated project cost of all investment projects in RIF-IP 2020 (Figure 4).

Table 2 shows the number and cost of transport investment projects in the RIF 2013–2022, RIF-IP 2014–2018, and RIF-IP 2020 by subsector, while Figure 5 illustrates RIF-IP 2020 alone. Roads and

**Figure 4: Share of Estimated Project Cost by Sector in the Regional Investment Framework Implementation Plan 2020**



BEZ = border economic zone, HRD = human resource development, ICT = information and communication technology, TTF = transport and trade facilitation.

Note: Percentages may not total 100% because of rounding.

Source: ADB. 2016. *Greater Mekong Subregion Regional Investment Framework Implementation Plan: Mid-Term Review and Revised Regional Investment Framework Implementation Plan 2020*. Paper prepared for the 21st GMS Ministerial Conference. Chiang Rai, Thailand. 30 November–1 December.

bridges have the largest number of projects, but railway projects predominate in terms of cost. The transport investment pipeline is complemented by 10 TA projects costing \$8.8 million, of which

5 projects have secured financing of \$6.2 million. The TA projects are mainly support project preparation, GMRA operations, studies on highway and bridge standards, and development of dry ports along international railway lines. The status of GMS transport investment and TA projects as of the end of June 2016 is in Appendix 4.

The progress of transport projects in the RIF-IP is being monitored and reviewed regularly by the GMS Subregional Transport Forum with the assistance of the GMS Secretariat. (Section VI.C). This process has resulted in some projects being deferred or substituted

with other projects due to changes in priorities or financing situation. The pipeline of transport projects in the Revised RIF-IP 2020 will be assessed and amended based on their contribution and alignment with the directions set by TSS 2030 in conjunction with the periodic review and updating of the RIF-IP.

## B. Financing

Investment projects in RIF-IP 2020 require total financing of \$32.6 billion, of which \$28.6 billion is for the transport sector alone. Of the \$28.6 billion, \$24.2 billion

**Table 2: Transport Investment Projects in the Regional Investment Framework 2013–2022, RIF Implementation Plan 2014–2018, and RIF-IP 2020 by Subsector**

Sector/Subsector	RIF 2013–2022		RIF-IP 2014–2018		RIF-IP 2020	
	No.	Cost (\$ million)	No.	Cost (\$ million)	No.	Cost (\$ million)
<b>All Sectors</b>	<b>130</b>	<b>51,500</b>	<b>61</b>	<b>30,344</b>	<b>68</b>	<b>32,561</b>
<b>Transport</b>	<b>84</b>	<b>44,079</b>	<b>42</b>	<b>27,090</b>	<b>42</b>	<b>28,646</b>
Road and bridges	52	13,491	24	7,346	25	9,561
Rail	14	30,107	5	19,190	5	18,412
Ports/waterways	10	87	5	462	4	446
Other transport	8	394	8	92	8	227

RIF = Regional Investment Framework, RIF-IP = RIF Implementation Plan.

Sources: ADB. 2013. *Greater Mekong Subregion Economic Cooperation Program: Overview of the Regional Investment Framework (2013–2022)*. Paper prepared for the 19th GMS Ministerial Conference. Vientiane, Lao PDR. 10–11 December; ADB. 2014. *Greater Mekong Subregion Regional Investment Framework Implementation Plan (2014–2018)*. Manila; and ADB. 2016. *Greater Mekong Subregion Regional Investment Framework Implementation Plan: Mid-Term Review and Revised Regional Investment Framework Implementation Plan 2020*. Paper prepared for the 21st GMS Ministerial Conference. Chiang Rai, Thailand. 30 November–1 December.

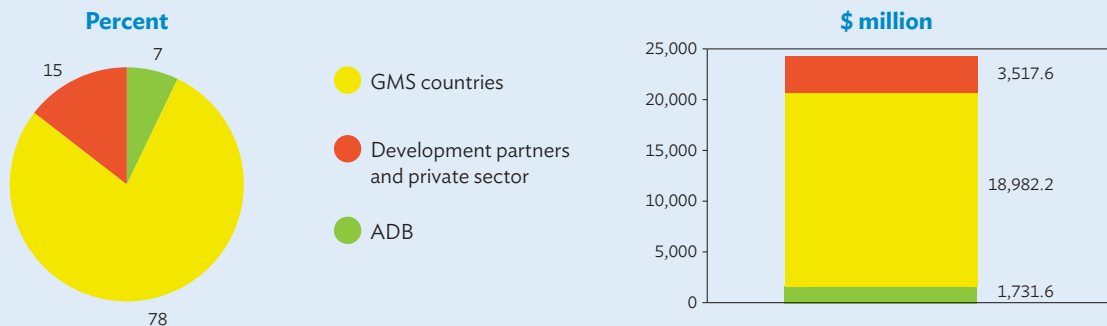
**Figure 5: Distribution of Transport Projects in the Regional Investment Framework Implementation Plan 2020**

(%)



Source: ADB. 2016. *Greater Mekong Subregion Regional Investment Framework Implementation Plan: Mid-Term Review and Revised Regional Investment Framework Implementation Plan 2020*. Paper prepared for the 21st GMS Ministerial Conference. Chiang Rai, Thailand. 30 November–1 December.

**Figure 6: Distribution of Identified Funding Sources for Transport Investment Projects in the Regional Investment Framework Implementation Plan 2020**



ADB = Asian Development Bank, GMS = Greater Mekong Subregion.

Source: ADB. 2016. *Greater Mekong Subregion Regional Investment Framework Implementation Plan: Mid-Term Review and Revised Regional Investment Framework Implementation Plan 2020*. Paper prepared for the 21st GMS Ministerial Conference. Chiang Rai, Thailand. 30 November–1 December.

in financing for 23 projects has been approved, committed, or included in future financing in a country program or equivalent. The funding gap of \$4.4 billion for 19 projects may be somewhat understated, as it is not certain that funding sources earmarked but not yet approved or committed will materialize. Figure 6 shows the identified funding sources for transport investment projects in RIF-IP 2020.

The sources of finance for GMS transport projects have been the participating governments, multilateral and bilateral development institutions, and, to a smaller extent, the private sector. A noteworthy feature of infrastructure finance in the GMS is the important role that the PRC and Thailand have played in assisting neighboring countries to upgrade their infrastructure in the spirit of cooperation among developing members.<sup>36</sup> Future efforts need to ensure that the identified funding resources are approved by such agencies. There are several steps from identification of a funding source to its commitment, approval, and utilization, so concerned GMS countries need to ensure that each step is completed as smoothly and expeditiously as possible.

New funding mediums have emerged that can significantly supplement the traditional sources of transport investment financing. These include the Asia Bond Fund, the Asian Bond Markets Initiative, the ASEAN Infrastructure Fund, and funds from the Asian Infrastructure Investment Bank. However, the ability of the GMS governments to borrow funds for infrastructure projects may be constrained by the concern to keep their debt burden within prudent limits. Increasing private sector financing of GMS transport projects has therefore become more important to ensure timely implementation of priority investment projects.

Although there has been private sector financing of some GMS transport projects, there are still many opportunities for private sector participation through various PPP schemes. More efforts are needed to promote PPPs, such as the establishment of frameworks and approaches to make transport infrastructure bankable and more attractive to the private sector. These include measures to offset or mitigate the commercial and sovereign risks faced by investors in these undertakings.<sup>37</sup> More generally,

<sup>36</sup> Neighbouring Countries Economic Development Cooperation Agency (NEDA) was established by the Government of Thailand in 2005 to assist and cooperate with neighboring countries to expand trade and investment opportunities among Thailand and its neighboring countries. NEDA. <http://www.neda.or.th/home/en/>.

<sup>37</sup> A regional guarantee facility has been proposed to promote private sector investments in the GMS. Envisioned as a mechanism for reducing country risks, this facility would issue guarantees and risk mitigation services to investors, contractors, exporters, and traders operating in the GMS.

achieving a more conducive business environment will be important.

Private sector investors need to tap various sources to finance their projects, especially for large projects involving PPPs. Some possible ways of raising funds for these projects include (i) corporate bond issues; (ii) debt and/or equity financing from ADB's private sector window or the International Finance Corporation, an affiliate of the World Bank; (iii) cofinancing arrangements between commercial banks and ADB and the World Bank; (iv) funding from bilateral development agencies such as the Japan Bank for International Cooperation, which is engaged in both public and private sector lending; and (v) credits from industrialized country export credit agencies, which are increasingly financing transactions without the need for government counter guarantees. It will be necessary to provide more information to the private sector about these possible sources of funds, including how to avail of these funding vehicles.

Initiatives that will be pursued to support resource mobilization for priority GMS transport projects include (i) examining the possibility of establishing a GMS project development facility to help prepare transport projects, including those for possible PPP arrangements; (ii) conducting a GMS transport investment forum to stimulate private sector interest and mobilize funding for priority GMS transport projects; and (iii) holding seminars and workshops to exchange experience and best practice approaches to PPP projects within and outside of the GMS, and to disseminate information on possible sources of financing for such projects.

### C. Institutional Arrangements and Mechanisms

Implementation of TSS 2030 will require close coordination among concerned agencies and between the public and private sectors in the GMS. The GMS-wide institutions involved in transport cooperation are the Subregional Transport Forum (STF), the GMRA, and the Joint Committee and its supporting bodies for implementing the CBTA. Engagement with

the private sector is conducted broadly through the GMS Business Council and more specifically through FRETA.

The STF is responsible for overall coordination of the implementation of TSS 2030, reporting to the GMS ministers through the Senior Officials' Meeting. Its terms of reference are as follows:

- Facilitate and coordinate the identification and formulation of GMS initiatives in the transport sector.
- Coordinate, monitor, and prepare progress reports on the implementation of GMS transport programs and projects.
- Facilitate the resolution of issues and bottlenecks in the implementation of GMS transport sector programs and projects.
- Work closely with FRETA to promote the participation of the private sector in GMS transport development.

The review of the GMS institutional framework conducted in 2016 concluded that the STF is working very well, partly due to the well-defined scope of work and strong ownership among concerned agencies in the GMS countries.<sup>38</sup> STF meets at least once a year, includes project status reports and strategic program and project level issues in its agenda, and involves the participation of key development partners and the private sector. The STF is expected to continue to perform its role of helping carry out the strategic thrusts and operational priorities of TSS 2030 in coordination with other closely related GMS bodies such as the Economic Corridors Forum and working groups on environment, tourism, and urban development.

The GMRA is a nonlegal intergovernmental organization established in August 2014 for the purpose of increasing “railway connectivity to promote efficient, safe and environmentally sustainable rail transport of goods and people in and beyond the GMS countries.”<sup>39</sup> Its more specific objectives include ensuring that all GMS countries are connected to a railway network by 2020, promoting the development of a seamless rail network, and developing the

<sup>38</sup> Footnote 15 (ADB 2016).

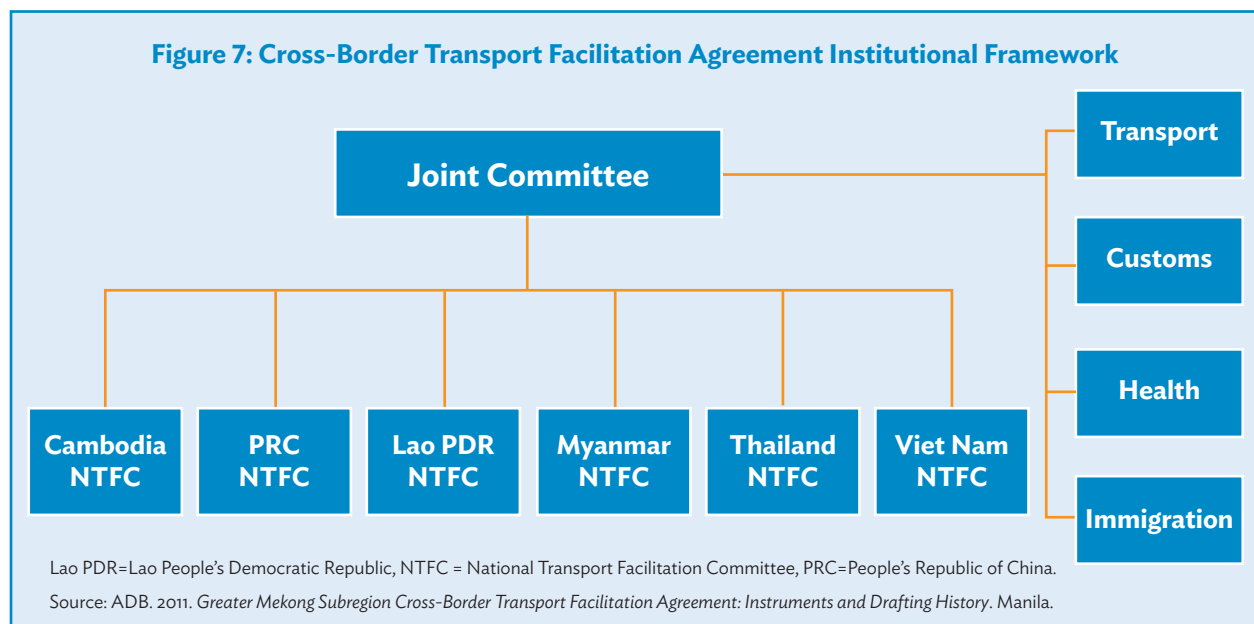
<sup>39</sup> Memorandum of Understanding for the Establishment of the Greater Mekong Railway Association. ADB.

institutions and procedures needed to integrate the national railways. Its members are the GMS governments and ADB. To help advance the GMRA’s priority programs, it has set up working groups on (i) network connectivity, (ii) network integration and interoperability, and (iii) partnerships and GMRA operations. With adequate support from its stakeholders, the GMRA is envisaged to spearhead the GMS railway development agenda.

The Joint Committee for the GMS CBTA is an advisory body tasked with coordinating, monitoring, and assessing the functioning of the CBTA and its annexes and protocols. Figure 7 shows the institutional framework for implementing the CBTA. The joint committee, which is at ministerial level, is supported by (i) four subcommittees covering transport, customs, health, and immigration; and (ii) the national transport facilitation committees in all GMS countries, which are responsible for coordinating and monitoring CBTA implementation within their respective countries. Important steps have been taken in the last few years to strengthen CBTA

institutional arrangements and mechanisms, including regularizing joint committee meetings and enhancing the participation of customs, health, and immigration authorities in the GMS countries. These initiatives must be sustained to accelerate TTF in the GMS.

A weak link in the institutional framework for transport development appears to be the interface with the private sector. The initial support provided to the GMS Business Council and FRETA by ADB and other development partners such as the European Union, Deutsche Gesellschaft für Internationale Zusammenarbeit, and the United Nations Economic and Social Commission for Asia and the Pacific has not been sufficient to generate a critical mass and momentum for their activities. To effectively promote private sector participation in GMS transport initiatives, it is imperative for FRETA to perform a more effective role. Accordingly, finding ways to help energize FRETA and more broadly to strengthen mechanisms for engaging with the private sector will be a major concern of TSS 2030.





## VII. MONITORING PROGRESS AND RESULTS

Yangon Central railway station. Commuters frequently use the Yangon Circular Train in Myanmar (photo by Eric Sales/ADB).

### A. Monitoring and Evaluation System

Monitoring progress in GMS transport development envisioned in TSS 2030 will involve tracking indicators and milestones at three levels: impact (e.g., increased cross-border trade), outcomes (e.g., reduced time and cost of travel), and outputs (e.g., kilometers of roads upgraded or railway lines constructed). The GMS Secretariat with the help of the national coordinators and concerned agencies in the GMS countries monitors the status of projects in the RIF-IP twice a year. However, the information collected is limited to the status of financing, commencement of feasibility studies, and start and completion of projects in the pipeline. There is much room for improving the monitoring process—even for output indicators—to be able to get a comprehensive picture of the progress in achieving the goals of GMS transport development. Quantitative data on outcomes and impact are more difficult to obtain due to the lack of timely, consistent, and comprehensive transport and trade statistics in the GMS.

Nevertheless, it is possible to build on what is available and to plan on filling the gaps eventually. What is important is to establish a regular monitoring system that can be sustained and improved over time. Output and, to some extent, outcome indicators can be sourced from the completion reports of ADB-funded GMS projects. Such information may not be available in non-ADB-funded GMS projects, but effort should be made to secure them to the extent possible. Impact

indicators are generally included in post evaluation reports of ADB-funded projects. Due to the lack of relevant statistics, qualitative assessment will be used to complement quantitative analysis of performance.

### B. Results Framework for 2018–2022

A results framework showing performance indicators for impact, outcomes, and outputs from 2018 to 2022 is presented in Table 3. The key milestones of the results framework are summarized below for easy reference.

#### Impact

- Percentage increase in intra-GMS trade
- Increase in the share of intra-GMS trade to total GMS trade
- Percentage increase in cross-border trade along the economic corridors
- Percentage increase in the volume of cross-border traffic along the economic corridors

#### Outcomes

- Reduction in time spent at border crossings
- Percentage reduction in cost incurred at border crossings
- Percentage reduction in vehicle operating cost



- Percentage reduction in time spent in intermodal connections (port–highway–railway)
- Reduction in the number of road and other transport-related crashes
- Improvement in road class or category of sections of the EWEC, the NSEC, and the SEC.
- Improvement in road roughness index
- Percentage increase in financing for road maintenance
- New mechanisms for generating funds for maintaining GMS roads, including the collection of user charges in the form of toll fees
- Progress in strengthening vehicle and axle overload control systems
- Integration of road safety features into GMS transport projects

**Outputs**

- Percentage of completion of road improvement projects the EWEC, the NSEC, and the SEC
- Kilometers of roads and railway built or upgraded
- Number of vehicles allowed entry into the territories of GMS countries
- Successful amendment of Protocol 1 of the CBTA
- Number of border-crossing points implementing the single-stop inspection scheme
- Dry ports and inland container depots (ICDs) constructed along the EWEC, the NSEC, and the SEC
- Logistics hubs in operation along the EWEC, the NSEC, and the SEC

Monitoring and evaluation of the implementation of TSS 2030 during its first 5 years of operation will focus on these milestones. When the required information is not available, steps should be taken to initiate periodic collection of key information. Lack of data also constrains target setting due to the absence of baseline information in many cases. Nevertheless, the framework presented here can serve as a guide for determining whether the efforts being taken are leading to the achievement of the goals of GMS transport development. An overall review of performance in implementing TSS 2030 will be carried out in 2022, on the basis of which the results framework will be updated and revised to cover the implementation of TSS 2030 from 2023 onward.

**Table 3: Greater Mekong Subregion Transport Sector Strategy 2030: Results Framework, 2018–2022**

Impact	Outcomes	Outcome Indicators/ Milestones	Outputs	Output Indicators/ Milestones
<b>Increased trade</b>	<b>Efficient movement of people, goods, and vehicles along the corridors</b>	Reduced cost and time of travel along the corridors	<ul style="list-style-type: none"> <li>• <b>Transport corridor network completed</b></li> <li>• <b>Cross-border transport facilitated</b></li> <li>• <b>Border-crossing management strengthened and institutional coordination behind the borders improved</b></li> </ul>	Upgrading, rehabilitation, or construction of missing transport links along the corridors; upgrading of the road links to South Asia and Southeast Asia
<b>Indicators</b>		<ul style="list-style-type: none"> <li>• <i>Reduction in time spent at border crossings</i></li> <li>• <i>% reduction in cost incurred at border crossings</i></li> <li>• <i>% reduction in vehicle operating cost</i></li> </ul>		<ul style="list-style-type: none"> <li>• <i>% of completion of road improvement projects along the corridors</i></li> <li>• <i>Km of roads built or upgraded</i></li> </ul>
		Improved intermodal links		
<b>Milestones</b>		<ul style="list-style-type: none"> <li>• <i>% reduction in time spent in intermodal connections (port–highway–railway)</i></li> </ul>		<ul style="list-style-type: none"> <li>• <i>Completion of Study on Dry Port Development along International Railway Lines Connecting Thailand, Cambodia, Lao PDR, and Myanmar</i></li> </ul>
		Baseline: values in 2015 or year when data are available		

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Table 3 *continued*

Impact	Outcomes	Outcome Indicators/ Milestones	Outputs	Output Indicators/ Milestones
<ul style="list-style-type: none"> <li>• Increase in the share of intra-GMS trade to total GMS trade</li> <li>• % increase in cross-border trade along the corridors</li> <li>• % increase in the volume of cross-border traffic along the corridors</li> </ul> <p>Baseline: values in 2015 or year when data are available</p>				<p>Expansion of exchange of traffic rights</p> <ul style="list-style-type: none"> <li>• <i>Number of vehicles allowed entry into the territories of GMS countries</i></li> <li>• <i>Successful amendment of Protocol 1 of the CBTA</i></li> </ul> <p>Implementation of SSI scheme in border-crossings along the corridors</p> <ul style="list-style-type: none"> <li>• <i>Number of SSIs operating</i></li> </ul> <p>Investment in dry ports and ICDs</p> <ul style="list-style-type: none"> <li>• <i>Dry ports and ICDs constructed along the corridors</i></li> </ul> <p>Establishment of logistics hubs</p> <ul style="list-style-type: none"> <li>• <i>Logistics hubs in operation along the corridors</i></li> </ul> <p>Improved institutional coordination</p> <ul style="list-style-type: none"> <li>• <i>Frequency of meetings of the CBTA Joint Committee, its working groups, and the national transport facilitation committees</i></li> <li>• <i>Training programs conducted on border management and operations</i></li> </ul> <p>Baseline: 2015</p>
				<p><b>Safe, reliable, and sustainable transport along the corridors</b></p> <p>Reduction in the number of road and other transport-related accidents</p> <p>Improvement in road class or category of sections along the corridors</p>

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Table 3 *continued*

<b>Impact</b>	<b>Outcomes</b>	<b>Outcome Indicators/ Milestones</b>	<b>Outputs</b>	<b>Output Indicators/ Milestones</b>
		Improvement of roughness index of road sections along the corridors  Baseline: 2015 or latest year when data are available	<ul style="list-style-type: none"> <li>• <b>Implementation of road safety measures made more effective</b></li> <li>• <b>Coordination of road safety measures across the national components of GMS economic corridors improved</b></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Completion of TA on GMS road maintenance</i></li> <li>• <i>Completion of study on feasibility of generating funding for road maintenance in Lao PDR through user charges or toll roads</i></li> <li>• <i>Progress in strengthening vehicle and axle overload control systems</i></li> <li>• <i>New mechanisms for generating funds for maintaining GMS roads, including the collection of user charges in the form of toll fees</i></li> </ul> <p>Improvement of road safety capacity and management</p> <ul style="list-style-type: none"> <li>• <i>Formulation and implementation of TA on road safety in the GMS, including capacity building</i></li> <li>• <i>Integration of road safety features into GMS transport projects</i></li> <li>• <i>Emergency management mechanisms in place</i></li> </ul>

CBTA = Cross-Border Transport Facilitation Agreement, GMS = Greater Mekong Subregion, ICD = inland container depot, km = kilometer, LAO PDR = Lao People's Democratic Republic, SSI = single-stop inspection, TA = technical assistance.

Source: GMS Transport Sector Strategy Team.

# Appendixes

## Appendix 1: Completed and Ongoing Greater Mekong Subregion Transport Investment Projects

This list comprises major transport investment projects in the Greater Mekong Subregion (GMS) transport corridors. It includes mainly projects funded or cofinanced by the Asian Development Bank and some projects funded by the GMS governments themselves and/or other development partners. Appendix 1 is based on the GMS Regional Investment Implementation Plan: Mid-Term Review and Revised Regional Investment Framework Implementation Plan 2020, which was presented at the 21st GMS Ministerial Conference. The said report discussed the status of GMS projects as of 30 June 2016.

### Completed

East–West Economic Corridor		
Project	Country	Description
Second International Mekong Bridge	Lao People’s Democratic Republic (Lao PDR) and Thailand	Constructed Mekong bridge, access roads, and border facilities between Mukdahan (Thailand) and Savannakhet (Lao PDR)
East–West Corridor	Lao People’s Democratic Republic	Rehabilitated 78 kilometers (km) of Road 9 and improved and constructed rural roads, bridges, and other rural infrastructure
East–West Corridor	Viet Nam	Rehabilitated 83 km of Road 9
GMS: Highway Expansion	Thailand	Program on HIV/AIDS and sexually transmitted infection prevention carried out by provincial health authority Upgraded 105 km of highway along the East–West Economic Corridor to a four-lane divided highway standard
North–South Economic Corridor		
Project	Country	Description
Yunnan Expressway	People’s Republic of China (PRC)	Constructed a 179 km four-lane controlled-access tollway expressway from Chuxiong to Dali, Yunnan
Fangcheng Port	People’s Republic of China	Constructed a one-berth container terminal and a one-berth bulk cargo terminal at Fangcheng Port  Constructed a 20 km highway component stretch of the 45 km two-lane port access expressway connecting the port with Nanning by way of Natan

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Appendix 1 *continued*

<b>North–South Economic Corridor</b>		
<b>Project</b>	<b>Country</b>	<b>Description</b>
Guangxi Roads Development	People's Republic of China	<p>Built 136 km of expressway, 43 km of class I road, and 48 km of class II connecting roads including bridges, tunnels, interchanges, and service areas</p> <p>Local roads (977.2 km) and link roads (64 km) built in the project area to provide fast and all-weather access to villages</p> <p>Installed equipment for road maintenance and safety, toll collection, communications, traffic management, vehicle weight and emissions testing, and office administration</p>
Western Yunnan Roads Development	People's Republic of China	<p>Built 76.3 km of expressway, including 19 km of connecting roads, 13 tunnels, 8 extra-large bridges, 89 large bridges, 3 interchanges, and 1 service area</p> <p>Upgraded 294 km of local roads</p> <p>Paved 158.6 km of local roads (from Shahe to Wama and from Longzhenqiao to Mucheng) with cobblestone and 135.4 km (from Huangcaoba to Longzhenqiao) with asphalt</p>
Guangxi Roads Development II	People's Republic of China	<p>Constructed 187.7 km of expressway, including 25 km of connecting roads, 12 interchanges, and 12 toll stations</p> <p>Constructed eight roadside stations, including four service areas and four parking areas, providing parking, refueling, restrooms, repairs, and restaurants to road users</p>
Dali–Lijiang Railway (Yunnan Province)	People's Republic of China	<p>Constructed 167 km of railway line, including 10 stations and access roads</p> <p>Created 87,687 person-years of construction-related employment, and 35,952 person-years of unskilled labor employment, of which 19,773 person-years (55%) were from local labor, minority groups, and women</p>
GMS Kunming–Haiphong Transport Corridor Noi Bai–Lao Cai Highway	Viet Nam	<p>Constructed 244 km of grade-separated and access-controlled highway, including 10 interchanges with toll booths, and 5 service areas, starting at Noi Bai in a suburb of Ha Noi and ending at Lao Cai, on the border with the PRC in northwest Viet Nam</p>
Western Guangxi Roads Development	People's Republic of China	<p>Constructed 177.9 km of expressway and upgraded 1,050.8 km of local roads</p> <p>Built 48 class V and 2 class III township bus stations (In 2013, the number of bus routes increased by 16.5% to 739 and the number of vehicles increased by 11.1% to 2,280 from 2012.)</p> <p>Displayed road safety signs and markings, and increased safety awareness</p>

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Appendix 1 *continued*

North–South Economic Corridor		
Project	Country	Description
GMS–Lao: Northern GMS Transport Network Improvement	Lao People's Democratic Republic	Upgraded Route 4 (367 km) and rural access roads (100 km) to all weather status  Performed periodic maintenance on national highways in accordance with Road Maintenance Fund procedures  Improved road safety capacity  Provided training in carrying out road safety audits to all provincial departments of the Ministry of Public Works and Transport  Provided training in conducting inspections of vehicle standards to 15 traffic police officers in Vientiane
Central Yunnan Roads Development	People's Republic of China	Opened as scheduled and effectively operated 64 km of expressway and upgraded 190 km of local roads  Procured electrical and mechanical works and other facilities and enhanced functioning and road safety through improved road safety facilities
Fourth Mekong International Bridge	Lao People's Democratic Republic and Thailand	Constructed the Mekong bridge between Houay Xai (Lao PDR) and Chiang Khong (Thailand)
Yunnan Integrated Road Network Development	People's Republic of China	Constructed new Longling–Ruili Corridor: opened 135 km of expressway and 23 km of highway to traffic, planted landscaping along the road right of way, and applied road safety facilities standards on project expressway
Southern Economic Corridor		
Project	Country	Description
Phnom Penh–Ho Chi Minh City Highway	Cambodia and Viet Nam	Reconstructed 105 km and improved 55 km of roads in Cambodia  Reconstructed 80 km of roads and completed 9 new bridges and 10 intersections/flyovers in Viet Nam  Constructed customs and immigration infrastructure on the Cambodian and Vietnamese sides of the border
GMS: Cambodia Road Improvement	Cambodia	Rehabilitated 150 km of roads (Siem Reap–Sisophon–Poipet), National Road (NR)5, and NR6.
GMS Rehabilitation of the Railway in Cambodia	Cambodia	Rehabilitated 600 km of railway infrastructure, including rail tracks and damaged bridges, on the southern and northern lines to permit safe operations at a mainline speed of at least 50 km/hour  Reconstructed 48 km of railway line from Sisophon to the Thai border  Rehabilitated 15 km of rail links to Sihanoukville container port and the port in Phnom Penh  Constructed access to 2 dry ports and 98-hectare freight and maintenance depot

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Appendix 1 *continued*

<b>Southern Economic Corridor</b>		
<b>Project</b>	<b>Country</b>	<b>Description</b>
GMS Southern Coastal Corridor	Cambodia and Viet Nam	Improved 4 km of National Highway (QL)80 between Xa Xia and Ha Tien, 21 km of QL63 between Minh Luong and Thu Bay, and 70 km of provincial road (TL)7 from Thu Bay to Ca Mau  Constructed bridges across the Cai Be and Cai Lon rivers, and border facilities at Xa Xia in Viet Nam  Improved 15 km of NR33, replaced 24 bridges and culverts on NR33, and constructed border facilities at Koh Kong and Prek Chak in Cambodia
GMS: Cambodia Northwest Provincial Road Improvement	Cambodia	Rehabilitated 113 km of roads (NR56), with 310 affected households resettled and compensated, and cross-border facilities in line with Cross-Border Transport Facilitation Agreement standards  Implemented road safety and maintenance program
Siem Reap Airport	Cambodia	Structurally strengthened the 2,550-meter-long and 45-meter-wide runway and the taxiway, and renewed surface markings so that wide-bodied aircraft, like the Boeing 737-400, can land and take off  Upgraded navigation aids and the airport lighting system, including distance measuring equipment, nondirectional radio beacon, precision approach path indicator, and approach guidance system  Installed fire and rescue facilities and equipment, including fire and rescue vehicles
Neak Loeung (Tsubasa) Bridge	Cambodia	Constructed this bridge across the Mekong River connecting Neak Loeung in Prey Veng Province to Kandal Province in Cambodia along the highway between Phnom Penh and Ho Chi Minh City

**Ongoing**

<b>East-West Economic Corridor</b>		
<b>Project</b>	<b>Country</b>	<b>Description</b>
Mae Sot-Myawaddy Border-Crossing Project and Infrastructure Improvements	Myanmar	Construction of bridge and bypass is ongoing. Project is expected to be completed by 2018.
Tak-Mae Sot Highway Improvement	Thailand	Project involves upgrading the existing road from 2 to 4 lanes, with total length of 76 km. Construction of 4 lanes for 25 km has been completed. Construction of another 24 km is ongoing.
East-West Economic Corridor Eindu-Kawkareik Road Improvement	Myanmar	ADB and the government approved the project in November 2015. Loan was signed on 8 April 2016. Construction commenced in September 2016. Consultant selection and procurement for civil works were completed, and ADB concurrence was received.

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Appendix 1 *continued*

North–South Economic Corridor		
Project	Country	Description
Second Northern GMS Transport Network Improvement	Lao People's Democratic Republic	Physical completion of 143 km of routes 6, 6A, and 6B in the Lao PDR to all-weather status is to be achieved by 2018. Road safety on the project sections of Northeastern Corridor is improved.
GMS Kunming–Haiphong Transport Corridor: Yen Vien–Lao Cai Railway Upgrading	Viet Nam	Project is rehabilitating 285 km of railway line from Yen Vien station in the northern suburbs of Ha Noi to Lao Cai on the border with the PRC.  Project has developed a safe, efficient, and environmentally sustainable railway transport system in the northwest region of Viet Nam; enhanced connectivity with the PRC through the Kunming–Hai Phong transport corridor; and assisted institutional reform of the railway subsector.
Dali–Ruili Railway	People's Republic of China	Dali–Baoshan section commenced in 2008 and will be completed in 2022; for Baoshan–Ruili section, bidding was completed in November 2015 and construction commenced in December 2015.  As of May 2016, 37.11% of total investment was finished, 41.3% of large and medium-sized bridges completed, and 32.7% of tunnel completed; most land acquisition work for Dali–Baoshan section was completed; and land acquisition for Baoshan–Ruili started.
Southern Economic Corridor		
Project	Country	Description
Greater Mekong Subregion Southern Coastal Corridor Project (Additional Financing)	Viet Nam	Road and bridge improvements were completed, enabling unrestricted passenger and freight transport.  Project improves 4 km of QL80 between Xa Xia and Ha Tien, 21 km of QL63 between Minh Luong and Thu Bay, and 70 km of TL7 from Thu Bay to Ca Mau; constructs bridges across the Cai Be and Cai Lon rivers; and constructs border facilities at Xa Xia.
Central Mekong Delta Region Connectivity	Viet Nam	Two cable-stayed bridges and 26 km of roads were to be opened by the end of 2017.  Bridge health monitoring, traffic management, and emergency response systems were fully operational by the end of 2017.
Greater Mekong Subregion Ben Luc–Long Thanh Expressway Project—Tranche 1	Viet Nam	The project will construct a 57.1 km expressway between Ben Luc and Long Thanh in the south of Ho Chi Minh City, which is a short link of the Southern Economic Corridor.

Source: ADB. GMS Projects Database.



## Appendix 2: Transport Corridors Comprising East–West Economic Corridor, North–South Economic Corridor, and Southern Economic Corridor

Corridor	Name in TSS 2015	Economic Corridor
1. Kunming–Chiang Rai–Bangkok via Lao PDR or Myanmar Corridor	Western	NSEC 1
2. Kunming–Boten–Oudomxay–Luang Prabang–Vang Vieng–Vientiane–Nong Khai–Udon Thani–Nakhon Ratchasima–Laem Chabang Corridor	North–South and Central	NSEC 2
3. Kunming–Ha Noi–Haiphong Corridor	Eastern	NSEC 3
4. Nanning–Ha Noi Corridor	Eastern	NSEC 4
5. Kunming–Muse–Mandalay–Yangon–Thilawa Corridor	Northern and Western	NSEC 5
6. Mandalay–Tamu Corridor	Northern	NSEC 6
7. Laem Chabang–Bangkok–Nakhon Ratchasima–Udon Thani–Nakhon Phanom–Thakhek–Na Phao–Vuong Ang –Ha Noi Corridor	Central and Eastern	NSEC 7
8. Vientiane–Paksan–Vinh–Ha Noi Corridor	Central and Eastern	NSEC 8
9. Da Nang–Savannakhet–Mukdahan–Mae Sot–Myawaddy–Yangon–Thilawa or Mawlamyine*	East–West	EWEC
10. Dawei–Bangkok–Phnom Penh–Ho Chi Minh City–Vung Tau Corridor	Southern	SEC 1
11. Bangkok–Siem Reap–Stung Treng–Pleiku–Quy Nhon Corridor	Southern	SEC 2
12. Bangkok–Trat–Kampot–Ha Tien–Nam Can Corridor	Southern Coastal	SEC 3
13. Sihanoukville–Phnom Penh–Stung Treng–Pakse–Savannakhet Corridor	Central	SEC 4

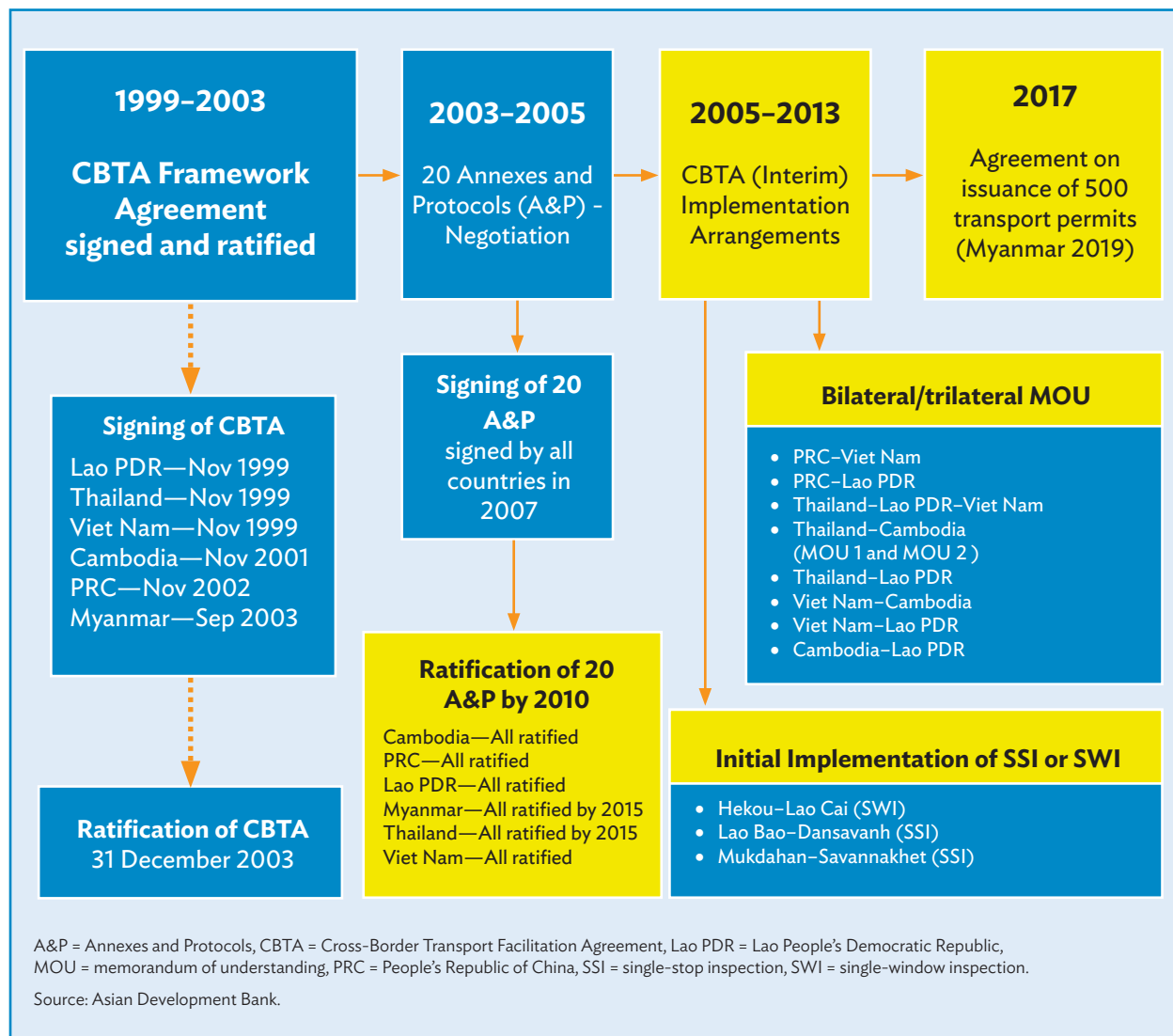
EWEC = East–West Economic Corridor, Lao PDR = Lao People’s Democratic Republic, NSEC = North–South Economic Corridor, SEC = Southern Economic Corridor, TSS = Transport Sector Strategy.

\* Extended to include section from Myawaddy to Yangon–Thilawa in the original alignment.

Note: The first column shows the corridor routes along the East–West, North–South and Southern Economic Corridors. The second column shows the names of these corridor routes in TSS 2015. The third column shows their corresponding names in the new configuration of the GMS economic corridors.

Source: Asian Development Bank.

### Appendix 3: Cross-Border Transport Facilitation Agreement Milestones



## Appendix 4: Status of Greater Mekong Subregion Transport Projects in Regional Investment Framework Implementation Plan 2020

### Investment Projects

Code/Name of Project	Country Coverage	Cost and Available Financing (\$ million)	Status as of 30 June 2016
<b>Cambodia</b>			
1 <b>CAM-TRA-01</b> Sihanoukville Port Access Road Improvements	Cambodia	40.0	Project has been cancelled by JICA because the scope of the original project covered only the construction of the multipurpose terminal at Sihanoukville Port and not the road construction. However, the Port Authority still considers it very important and is seeking funding from other development partners.
2 <b>CAM-TRA-02</b> Road Network Improvement (formerly GMS: Deepening Connectivity of Southern Economic Corridor)	Cambodia	160.0 ADB	The original project was redefined as a new project. It now consists of two road improvement projects (Provincial Road Improvement Project II and Second Road Asset Management Project) covering about 415 km. The new project is expected to commence in 2017.
3 <b>CAM-TRA-03</b> Phnom Penh–Sihanoukville Highway Corridor Improvements	Cambodia	1,600.0 BOT (private sector)	Feasibility study was completed by China Road and Bridge Corporation, and the study results are being analyzed by the Ministry of Economy and Finance. Implementation is expected by the end of 2016.
4 <b>CAM-TRA-04</b> Link Road between NR5 and NR6 near Kampong Tralach North of Phnom Penh	Cambodia	60.0	No progress has been made on the project to date. The MPWT will begin to work on this project in 2017, and hopes to start implementation by 2019.
5 <b>CAM-TRA-05</b> Construction of Poipet (Cambodia)–Klong Loeuk (Thailand) Railway Bridge	Cambodia, Thailand	0.5 Thailand	Construction of the bridge, financed by assistance from Thailand, was completed in August 2015. The Cambodian Railway Department is renovating the 6.5 km missing link at Poipet with government funds, which is expected to be completed by August 2016 and will connect Serey Saoporn–Poipet.
<b>Investment projects not yet included in the approved RIF-IP</b>			
6 <b>CAM-TRA-06</b> Railway Access to New Phnom Penh Port (53 km)	Cambodia	200.0	<b>Proposed to be added.</b> The study for this project was included in the RIF. Cambodia is proposing that the construction itself be included as an investment project in the RIF-IP, and therefore also in the RIF. Financing is being sought from multilateral/bilateral development partners and/or the private sector.
7 <b>CAM-TRA-07</b> Southern Siem Reap Bypass Road (193.7 km)	Cambodia	200.0	<b>Proposed to be added.</b> There is a need to construct a new road bypassing Siem Reap to avoid congested roads in the city when traveling along the SEC toward the border with Viet Nam. The road will avoid the protected area around Angkor Wat.

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Appendix 4 continued

Code/Name of Project	Country Coverage	Cost and Available Financing		Status as of 30 June 2016
		(\$ million)		
8 <b>CAM-TRA-08</b> Construction of Bus/ Truck Driving Test Centre	Cambodia	10.0		<b>Proposed to be added.</b> The estimated project cost involves acquisition of equipment and/or construction of facilities. It may consist of a combination of a technical assistance project and an investment project, with the latter involving the actual setting up of such a center. The project addresses a definite and recognized need in the region, and a regional technical assistance project involving all countries can be developed by ADB with the same objective.
<b>People's Republic of China</b>				
9 <b>PRC-TRA-01</b> Yunnan Pu'er Regional Integrated Road Network Development	PRC	540.0	ADB	Feasibility study was completed in June 2014. Two project components (Pu'er City rural road and Ning'er–Jiangcheng– Longfu road) are at various stages of procurement/bidding, while the third component (Menglian–Meng'a road) has completed land acquisition and started construction work.
10 <b>PRC-TRA-02</b> Dali–Ruili Railway	PRC	4,020.0	PRC	Dali–Baoshan section commenced in 2008 and will be completed in 2022; for Baoshan–Ruili section, bidding was completed in November 2015 and construction commenced in December 2015. As of May 2016, 37.11% of total investment finished, 41.29% of large and medium bridges completed, 32.74% of tunnel completed; most land acquisition work for Dali–Baoshan section was completed; and land acquisition for Baoshan–Ruili started.
11 <b>PRC-TRA-03</b> Further Maintenance and Improvement of Upper Mekong River Navigation Channel from PRC (Landmark 243) and Myanmar to Luang Prabang, Lao PDR	PRC, Lao PDR, Myanmar, Thailand	359.4	14.7 (PRC) for preliminary works Balance TBD	First meeting of joint working group on preliminary work was held in September 2015, and the four countries agreed on work contents and schedule. Public bidding process was completed in early 2016. The PRC, the Lao PDR, and Myanmar approved the implementation plan. Preliminary work related to these countries will start in the second half of 2016.
12 <b>PRC-TRA-04</b> Yuxi–Mohan Railway	PRC	8,062.5	PRC and ADB	Feasibility study was approved by the Government of the PRC (National Development and Reform Commission) in July 2015. Bidding process for the whole line commenced in February 2016 and was completed in April 2016. Total of \$375 million was invested in 2015. Planned investment in 2016 is \$1.25 billion; as of May 2016, \$66.7 million has been invested.
<b>Lao People's Democratic Republic</b>				
13 <b>LAO-TRA-01</b> Vang Tao Border-Crossing Point	Lao PDR	15.0	Government provincial budget	Construction commenced on 14 December 2013. Implementation progress is at 75%.
14 <b>LAO-TRA-02</b> Upgrading NR13N and N13S (Portion through Phon Hong–Vientiane–Ban Hai); ASEAN Highway AH11 (NR13S)	Lao PDR	320.0		Feasibility study covering 106 km length was completed in December 2014. The environmental and social resettlement plan is being enhanced. MPWT is working with the World Bank to prepare a detailed report to the government.

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Appendix 4 *continued*

<b>Code/Name of Project</b>	<b>Country Coverage</b>	<b>Cost and Available Financing (\$ million)</b>	<b>Status as of 30 June 2016</b>
15 <b>LAO-TRA-03</b> Mekong Bridge at Bungkan–Paksan	Lao PDR, Thailand	0.0 Note: project cost and financing included under project THA-TRA-07 #37 below	With a grant from NEDA of Thailand, a feasibility study and detailed design were completed in August 2014. Ministry of Finance is in the process of seeking a soft loan from NEDA to finance the construction cost (\$36 million) (THA-TRA-07).
16 <b>LAO-TRA-04</b> Thanaleng Border-Crossing Infrastructure Improvement	Lao PDR	25.0	Preliminary study on infrastructure improvement needs was completed. Some minor traffic lane expansion was undertaken at the checkpoint. Financing for a feasibility study and construction is being sought.
17 <b>LAO-TRA-05</b> Hongsa (Xayaboury)–Chomphet (Luang Prabang)	Lao PDR	90.0 NEDA	Project implementation with loan from NEDA commenced in September 2015. As of 30 June 2016, estimated progress was at 6%. Project is expected to be completed in May 2018.
18 <b>LAO-TRA-06</b> Upgrading of NR8 East–West Transport Route; ASEAN Highway AH15 (Ban Lao–Nan Pao)	Lao PDR	80.0	Government of the Republic of Korea (through KOICA) team conducted an implementation survey in April 2016. Department of Roads, MPWT, in collaboration with the team, is preparing a record of discussion for the detailed feasibility study. The KOICA grant for this study is expected to be effective in fiscal year 2016–2017.
19 <b>LAO-TRA-07</b> Xiengkong River Port	Lao PDR	15.0	Feasibility study was completed in April 2010. Project was included in Sino–Lao Cooperation 2016–2020 Scheme, and contract for construction and memorandum of understanding were signed on 30 December 2015. PRC loan approval is pending, and implementation can commence in early 2017.
20 <b>LAO-TRA-08</b> Ban Mom River Port	Lao PDR	12.0	Project is known as the Development Plan for International Navigation on the Lancang–Mekong River 2015–2025. Preliminary feasibility study is being finalized by the Department of Waterways. The provincial government is considering using BOT method for this port upgrading project.
21 <b>LAO-TRA-09</b> Lalay Border-Crossing Point (NR15)	Lao PDR	10.0	Preliminary feasibility study financed by the provincial government was completed in August 2013. Financing for detailed feasibility study and construction has been sought from the Organization of the Petroleum Exporting Countries.
22 <b>LAO-TRA-10</b> Nam Phao Border-Crossing Point (NR8)	Lao PDR	8.0	MPWT plans to propose to KOICA to include the feasibility study of this project in the scope of detailed assistance for NR8 Upgrading Project.
23 <b>LAO-TRA-11</b> Na Phao Border Crossing Point (NR12)	Lao PDR	10.0	MPWT plans to include the feasibility study of this project in the NR12 Upgrading Project, which has sought a soft loan from NEDA.
24 <b>LAO-TRA-12</b> Luang Namtha–Xiengkong Lao–Myanmar Friendship Bridge (NR17)	Lao PDR, Myanmar	150.0	Financing for a pre-feasibility study is being discussed with the World Bank. Viet Nam has also participated in meetings. The Government of the Lao PDR sent a letter to the World Bank in December 2015 to support Viet Nam’s request for financing of the pre-feasibility study (see VIE-TRA-06 #45).

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Appendix 4 continued

Code/Name of Project	Country Coverage	Cost and Available Financing		Status as of 30 June 2016
		(\$ million)		
25 <b>LAO-TRA-13</b> Lao PDR–Myanmar Friendship Bridge over Mekong at Xiangkok	Lao PDR, Myanmar	30.0	Lao PDR and Myanmar (50:50 basis)	Construction was completed in March 2015, and the bridge was inaugurated in May 2015 (MYA-TRA-04 #30).
26 <b>LAO-TRA-14</b> Vientiane–Boten Railway	Lao PDR	6,040.0	PRC	Feasibility study was completed in April 2011. Groundbreaking ceremony was held on 2 December 2015. The government is reviewing a draft concession agreement. Signing ceremony of concession agreement between the government and the Lao–China Joint Venture Railway State Enterprise is scheduled for September 2016. Construction is scheduled to begin in October 2016.
<b>Myanmar</b>				
27 <b>MYA-TRA-01</b> East–West Economic Corridor Eindu–Kawkareik Road Improvement	Myanmar	121.8	ADB	Feasibility study and detailed design were completed in January 2015. ADB and the government approved the project in November 2015. Loan was signed on 8 April 2016. Construction was expected to commence in September 2016. Consultant selection and procurement for civil works were completed, and ADB concurrence was received.
28 <b>MYA-TRA-02</b> Mae Sot–Myawaddy Border-Crossing Project and Infrastructure Improvements (with Thailand)	Myanmar, Thailand	0.0	Note: Project cost and financing included under project THA-TRA-06#36	Construction commenced in August 2015 under grant financing from the Government of Thailand (\$116 million—see THA-TRA-06 #36). Bridge and bypass construction is ongoing. Project is expected to be completed in 2017.
29 <b>MYA-TRA-03</b> Improvement of Inland Ports	Myanmar	60.0		Project is to establish six inland ports along Ayeyarwaddy and Chindwin rivers. Feasibility study for Mandalay Port was completed in February 2014. Government is seeking financing for implementation from JICA. The estimated cost for Mandalay Port is \$38.0 million; estimated time required for implementation is about 2 years.
30 <b>MYA-TRA-04</b> Lao–Myanmar Friendship Bridge over Mekong River at Xiengkong–Kainglap	Lao PDR, Myanmar	26.0	Lao PDR and Myanmar (50:50 basis)	Bridge was completed in March 2015 and inaugurated on 9 May 2015 (LAO-TRA-13 #25).
<b>Thailand</b>				
31 <b>THA-TRA-01</b> Bang Yai–Kanchanaburi Intercity Motorway Project (part of Laem Chabang–Bangkok–Dawei [Myanmar] Corridor)	Myanmar, Thailand	2,000.0		Feasibility study was completed in August 2009; project was approved by the cabinet of the Government of Thailand in July 2015. Source of funding is still to be determined.
32 <b>THA-TRA-02</b> Tak–Mae Sot Highway Improvement	Thailand	90.0	Thailand	Project involves upgrading the existing road from two to four lanes, with total length of 76 km. Construction of four lanes for 25 km has been completed. Construction of another 24 km is ongoing.

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Appendix 4 *continued*

Code/Name of Project	Country Coverage	Cost and Available		Status as of 30 June 2016
			Financing (\$ million)	
33 <b>THA-TRA-03</b> Lom Sak–Phetchabun Highway Improvement	Thailand	120.0	Thailand	Project involves upgrading the existing road from two to four lanes, with total length of 92 km. Implementation commenced in April 2016 for 11 km. The remaining part is planned to be allocated in fiscal year 2017.
34 <b>THA-TRA-04</b> Kalasin–Nakrai–Kamcha I Highway Improvement	Thailand	140.0	Thailand	Project involves upgrading the existing road from two to four lanes, with total length of 107 km. Implementation commenced on 15 May 2015. Budget for fiscal year 2016 is for 13 km. The remaining part is planned to be allocated in fiscal year 2017.
35 <b>THA-TRA-05</b> Chiang Rai–Chiang Khong Highway Improvement	Thailand	80.0	Thailand	Project involves upgrading the existing road from two to four lanes, with total length of 103 km. Construction of four lanes for 55 km has been completed. The remaining part is included in the next 5-year plan.
36 <b>THA-TRA-06</b> Mae Sot–Myawaddy Border–Crossing Project and Infrastructure Improvements	Thailand, Myanmar	116.0	Thailand	Project construction is ongoing (MYA-TRA-02 #28).
37 <b>THA-TRA-07</b> Mekong Bridge at Bungkan–Paksan	Thailand, Lao PDR	110.0		Feasibility study was completed in 2014. Project is included tentatively and subject to availability of budget for the Thai part (50% of the project financing); for the Lao PDR part, the Government of the Lao PDR is considering seeking financing from NEDA (LAO-TRA-03 #15). Detailed design was completed in 2015.
38 <b>THA-TRA-08</b> Laem Chabang Port Development Project, Phase 3— Feasibility Study	Thailand	5.0		Feasibility study was 98% completed, excluding environmental health impact assessment part. Design and economic and financial study were completed. Corporate social responsibility measures were launched. Investment is projected to commence implementation in 2025.
39 <b>THA-TRA-09</b> Single Rail Transfer Operator Development Project of Laem Chabang Port	Thailand	90.0	Thailand	Feasibility study was completed in September 2011. Project objective is to increase the proportion of container traffic moved by rail from 9% to 20% of port throughput, in line with government’s policy to reduce logistics cost. Project has been approved by the Government of Thailand. Implementation is expected to commence in 2018.
<b>Viet Nam</b>				
40 <b>VIE-TRA-01</b> GMS Ben Luc–Long Thanh Expressway (Stage 2)	Viet Nam	1,607.0	ADB 286.0 JICA 517.6 Viet Nam 48.3 TBD 755.1	Of 11 contract packages, 8 were implemented and remaining 3 packages were in procurement. Land acquisition stakeout was handed over to local agencies. Compensation and resettlement were approved by local agencies. Negotiation of second loan (from ADB) was completed.
41 <b>VIE-TRA-02</b> GMS Ha Noi–Lang Son Expressway	Viet Nam	1,400.0	ADB Viet Nam Private sector BOT	Feasibility study commenced and was intended to be completed in second quarter of 2016. Project was approved by the Government of Viet Nam.

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Appendix 4 continued

Code/Name of Project	Country Coverage	Cost and Available		Status as of 30 June 2016
			Financing (\$ million)	
42 <b>VIE-TRA-03</b> Second GMS Southern Coastal Corridor (also known as SSCP2)	Viet Nam	373.0	ADB	Project has three components. For Rach Gia–Ha Tien route component, feasibility study was funded by ADB and contract was signed between ADB and Snowy Mountains Engineering Corporation; feasibility study has not yet been approved. Ha Tien international border gate and bridge components were included in SSCP2 on 24 July 2015. Ha Tien bridge feasibility study was completed in December 2012.
43 <b>VIE-TRA-04</b> Second GMS Northern Transport Network Improvement (Luang Prabang–Thanh Hoa) (additional financing)	Viet Nam Lao PDR	140.0	ADB	About 90 km road from border with the Lao PDR to Batouc was substantially completed in May 2016. Additional financing for project to improve another 45 km road from Batouc to Cam Thuy was approved by ADB in November 2015, with expected completion in 2019. Road construction was expected to commence in early 2017.
44 <b>VIE-TRA-05</b> National Highway 14D Improvement	Viet Nam	110.0	ADB	Concept of the project is under preparation; project preparatory technical assistance commencement is expected in early 2017. Project merged with Northern Mountains Connectivity Project and title was changed to GMS Corridor Enhancement Project (\$440 million).
45 <b>VIE-TRA-06</b> Northern East–West Corridor: Son La–Dien Bien–Tay Trang Border Gate (Viet Nam and Lao PDR) connecting with Luang Namtha (Lao PDR) to Friendship Bridge (Lao PDR–Myanmar) project at Xiengkong–Kainglap	Viet Nam, Lao PDR	TBD		This project was originally included in the RIF–IP at the 19th Subregional Transport Forum in Phnom Penh, but no status was given at the 20th Subregional Transport Forum in June 2016 in Nanning. (Guidance from Viet Nam’s Ministry of Transport is being sought regarding this project.)

### Technical Assistance Projects

Name of Project	Country Coverage	Cost and Available		Status as of 30 June 2016
			Financing (US\$ million)	
1 <b>VIE-TRA-TA-01</b> Highway 14D Improvement	Viet Nam	1.0	ADB	Project merged with Northern Mountains Connectivity Project, and title was changed to GMS Corridor Enhancement Project (VIE-TRA-05 #44).
2 <b>REG-TRA-TA-02</b> Second GMS Northern Transport Network Improvement: Luang Prabang (Lao PDR)–Thanh Hoa (Viet Nam)	Lao PDR, Viet Nam	1.5	ADB	Completed
3 <b>VIE-TRA-TA-03</b> Proposed Hoa Lac– Hoa Binh City Expressway PPP Project Feasibility Study	Viet Nam	1.0		No reported updates

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Appendix 4 *continued*

<b>Name of Project</b>	<b>Country Coverage</b>	<b>Cost and Available Financing (US\$ million)</b>	<b>Status as of 30 June 2016</b>
4 <b>REG-TRA-TA-04</b> Feasibility Study for Rail Link between Laem Chabang Port and Dawei Deep Sea Port	Myanmar Thailand	3.0 Thailand	Feasibility study was completed in 2015. Hiring of consultants to undertake detailed design and environmental impact assessment for rail construction project in Thailand (Ban Phu Nam Ron–Laem Chabang Port) was in process. A 12-month contract was expected to be signed in September 2016.
5 <b>REG-TRA-TA-05</b> Building Institutional Capacity of Greater Mekong Railway Association	All GMS countries	0.2 ADB	Technical assistance is ongoing.
6 <b>REG-TRA-TA-06</b> GMS Road Corridors Maintenance	All GMS countries	1.2	ADB will discuss further with the governments.
7 <b>REG-TRA-TA-07</b> Strategic Study on Development and Management of GMS Motorway Network System	All GMS countries (proposed by Thailand)	TBD	No activities have been undertaken. Project framework development is pending.
8 <b>REG-TRA-TA-08</b> Knowledge Transfer between Thailand and GMS Member Countries on Highway and Bridge Standards and Specifications, including Transport Facilitation Facilities	All GMS countries (proposed by Thailand)	0.4	No activities have been undertaken. Project framework development is pending.
9 <b>REG-TRA-TA-09</b> Promotion and Application of the Northeast Asia Logistics Information Service Network (NEAL–NET) in the GMS	All GMS countries	TBD	<b>Proposed to be dropped.</b> PRC proposed deletion of the project from the RIF-IP because it is already being undertaken in the ASEAN–PRC framework; deletion will avoid duplication.
10 <b>REG-TRA-TA-10</b> Study on Dry Port Development Plan along International Railway Lines Connecting Thailand with Cambodia, Lao PDR, and Myanmar	Thailand with Cambodia, Lao PDR, and Myanmar	0.5 Thailand	Terms of reference are being drafted. State Railway of Thailand will be responsible for cost of hiring project consultant. As of May 2016, there was no further update.

ADB = Asian Development Bank, ASEAN = Association of Southeast Asian Nations, BOT = build–operate–transfer, GMS = Greater Mekong Subregion, JICA = Japan International Cooperation Agency, km = kilometer, KOICA = Korea International Cooperation Agency, Lao PDR = Lao People's Democratic Republic, MPWT = Ministry of Public Works and Transport, NEDA = Neighbouring Countries Economic Development Cooperation Agency, PPP = public–private partnership, PRC = People's Republic of China, RIF = Regional Investment Framework, RIF-IP = RIF Implementation Plan, SEC = Southern Economic Corridor, TBD = to be determined.

Source: ADB. 2016. *Greater Mekong Subregion Regional Investment Framework Implementation Plan: Mid-Term Review and Revised Regional Investment Framework Implementation Plan 2020*. Paper prepared for the 21st GMS Ministerial Conference. Chiang Rai, Thailand. 30 November–1 December.

## **GMS Transport Sector Strategy 2030**

*Toward a Seamless, Efficient, Reliable, and Sustainable GMS Transport System*

This new strategy for transport development in the Greater Mekong Subregion (GMS) consists of a strategic framework covering 2018–2030 and a set of performance indicators initially covering 2018–2022. It is mainly a strategic document providing a common framework for GMS cooperation in the transport sector. Cooperation in the transport sector has been at the core of the GMS Economic Cooperation Program since its inception in 1992. The main thrust of the program was eliminating the barriers to cooperation, and the significant lack of connectivity was a critical constraint on economic relations among the GMS countries.

### **About the Greater Mekong Subregion Economic Cooperation Program**

The Greater Mekong Subregion (GMS) is made up of Cambodia, the Lao People's Democratic Republic, Myanmar, the People's Republic of China (specifically Yunnan Province and Guangxi Zhuang Autonomous Region), Thailand, and Viet Nam. In 1992, with assistance from the Asian Development Bank and building on their shared histories and cultures, the six countries of the GMS launched a program of subregional economic cooperation—the GMS Program—to enhance their economic relations. The Program currently covers the following priority sectors: agriculture; energy; environment; health and other human resource development; information and communication technology; tourism; transport; transport and trade facilitation; and urban development, border economic zones, and other multisector.

### **About the Asian Development Bank**

ADB is committed to achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty. Established in 1966, it is owned by 67 members—48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.



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