



# Completion Report

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Project Number: 42518-024  
Technical Assistance Number: 9123  
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## Connecting the Railways of the Greater Mekong Subregion

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TA Number, Country, and Name:		Amount Approved: \$500,000	
TA 9123-REG: Connecting the Railways of the Greater Mekong Subregion		Revised Amount: not applicable	
Executing Agency: Asian Development Bank	Source of Funding: People's Republic of China Poverty Reduction and Regional Cooperation Fund	Amount Undisbursed: \$120,943.36	Amount Utilized: \$379,056.64
TA Approval Date: 21 June 2016	TA Signing Date: 21 June 2016	Fielding of First Consultant: 27 July 2016	TA Completion Date Original: 30 September 2017      Actual: 30 September 2018  Account Closing Date Original: 30 September 2017      Actual: 12 December 2018
<p><b>Description</b></p> <p>The Greater Mekong Subregion Economic Cooperation Program Strategic Framework, 2012–2022 stresses the importance of (i) ensuring that all countries in the Greater Mekong Subregion (GMS) are connected to a GMS rail network by 2020, and (ii) promoting the development of a seamless rail network in the GMS as part of a regional cooperation strategy to facilitate cross-border infrastructure development. The Asian Development Bank (ADB) provided technical assistance (TA) to assess the requirements for regional rail connectivity and prepared the Connecting Greater Mekong Subregion Railways: A Strategic Framework, which was endorsed at the GMS ministerial meeting held in Ha Noi in August 2010.<sup>1</sup> These agreements laid the groundwork for regional rail development, along with the establishment of the Greater Mekong Railway Association (GMRA), whose membership includes all the GMS countries.</p> <p>To create a regional rail network, it is necessary to develop the missing rail links. To this end, the GMS countries have identified and agreed upon nine priority rail links that, when completed, will enhance railway connectivity in the GMS. The GMRA board approved the nine-rail links in March 2015. These nine links will ensure a complete regional rail network. The TA was a direct response to the GMS member governments' request for ADB assistance to review the rail links and provide advice on suitable financial and investment opportunities. ADB and the GMS countries agreed upon the TA through the GMRA as outlined in the design and monitoring framework.</p> <p>The TA assessed each of the nine-rail links, building on previous studies, and determined infrastructure and operations cost, market demand for passengers and freight, revenues, financial and economic viability, social issues and safeguards requirements. The TA added to the existing studies on alternate scenarios reflecting the network impacts of regional rail development as opposed to stand-alone rail links and demonstrated the interactive nature of national and regional plans over time. The policy advice provided by the TA supported the development of regional rail connectivity, in addition and parallel to the growth of national rail networks, to form a complete rail network in the region.</p> <p><b>Expected Impact, Outcome, and Outputs</b></p> <p>The expected impact of the TA was greater railway connectivity in the GMS. The TA's outcome was a suitable investment program prepared for the viable missing rail links. Outputs included (i) updated studies prepared for the nine-rail links, (ii) criteria developed to assess and prioritize the financing options for the viable rail links, (iii) potential financing modalities identified for the viable rail links, and (iv) network impact scenarios conceived for alternate regional rail development. At both appraisal and completion, the TA is assessed as <i>relevant</i>, as intended outcome was aligned with the developmental priorities of cross-border infrastructure development, promotion of sustainable transport modes, and improvement in subregional cooperation. The data updates and knowledge sharing during the working group meetings may have contributed to the decision-making of the GMS countries on their respective project pipelines, which makes the TA relevant to GMRA country members.</p> <p><b>Delivery of Inputs and Conduct of Activities</b></p> <p>The planned inputs for the international consultants were 10 person-months for the core team and 30 person-months for the study team that was originally envisaged. Five individual consultants: (i) four international – railway specialist/ team leader; senior transport modelling specialist; railways specialist (strategy); and transport modelling specialist; and (ii) one national – senior regional project coordinator, were engaged. The actual inputs were only 12.17 person-months for a single team engaged by ADB that assumed the duties envisaged for the core and study teams. The</p>			

<sup>1</sup> ADB. 2010. *Technical Assistance Completion Report: Greater Mekong Subregion: Railway Strategy Study*. Manila (TA 7255-REG); and ADB. 2010. *Connecting Greater Mekong Subregion Railways: A Strategic Framework*. Manila.

consultants were able to deliver intended tasks in their terms of references (TORs), and in addition exceeded the requirements for demand assessments by developing a transport demand model that is available for later use, indicating considerable efficiency in implementation. On the other hand, the planned inputs for national coordination specialist was 12 person-months, against actual inputs of 24.59 person-months, for the additional support for the GMRA and TA team, and coordination with the individual railway bodies. There was a delay in the consultant selection of the international modelling specialist due to difficulties in finding a suitable candidate. Also, it was found out that 11-month input would be required from the consultant to complete the development of a multi-modal passenger and freight demand model that was of greater scope than initially envisaged at the time of TA design as elaborated below. All consultants were well qualified and performed satisfactorily in accordance with their TORs. The consultants brought valuable experience, considerable insight and international best practice with respect to rail projects.

The activities were consistent with design and monitoring framework activities. The consultants gathered and reviewed existing data on the nine-rail links, evaluated for economic and financial viability incorporating key social and environmental considerations. Findings were presented through in-country consultations in Cambodia, People's Republic of China, Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand and Viet Nam. The evaluation criteria developed and jointly agreed by the GMRA, GMS countries and rail operators, were used on the evaluation of the nine-rail links. The TA also provided preferred financing modalities for the viable rail links suitable for rail investments, which were accepted by the GMRA, GMS countries and rail operators. The multi-modal demand model developed by the TA is available to support further rail and road feasibility studies in the GMS countries.

The TA formally commenced with the meeting of the Working Group on Network Connectivity (Working Group) on November 2016 in Bangkok. The Inception Phase of the TA took place from November 2016 to February 2017. Country visits and consultations, as well as additional meetings were held in Cambodia, Lao PDR, Myanmar, People's Republic of China and Thailand. A draft final report of the TA was issued on 6 March 2018 and the findings were presented in Vientiane, Lao PDR, at the GMRA Board of Directors General Meeting held on 22 March 2018. Comments from GMRA member countries were incorporated in the final Consultant's Report submitted in September 2018. This report included new technical work on demand model calibration, updated project costings, revised economic and financial evaluations due to changes in costs, and new screenings for environmental and social aspects.

The original closing date was 30 September 2017, then ADB requested extension of the TA for 6 months, up to 31 March 2018, to allow completion of the modeling activities, which were crucial as output of the TA. Further extension was requested until 31 July 2018, to finalize the outputs and disseminate the findings with the GMRA Board of Directors' meeting scheduled in late March 2018. The final and third extension was approved up to 30 September 2018 to enable the team to incorporate feedback from GMS member countries on the draft final TA consultant's report to produce the final report. The expenses incurred were mainly for consulting services and meeting and workshop expenses. The TA had an undisbursed amount of \$120,943.36 at its closing, mostly savings from consultant's allocation and provision for studies. The international team of consultants was leaner than as planned. The TA did not utilize its contingency.

The performance of the government counterparts was considered *satisfactory* given their proactive engagement in the TA implementation, and their close cooperation and coordination with the consultants, as well as participation in the workshops. ADB performance was also considered *satisfactory*. ADB actively coordinated with the government counterparts and provided guidance to the consultants to ensure effective and smooth implementation of the TA. Regular meetings and sharing of information also facilitated smooth implementation and transfer of knowledge to the counterparts.

#### **Evaluation of Outputs and Achievement of Outcome**

The outcome of the TA was substantially achieved. The cost-effective and suitable investment program was prepared for the viable missing rail links and accepted by the GMRA countries at the meeting in Vientiane, Lao PDR in March 2018 as a part of the review of the consultant's reports. However, the GMRA board is yet to formally prepare a detailed investment plan for the viable missing rail links and associated rail investments. ADB with PRCF financing is in the process of continuing support to the GMRA board with the preparation of an operational readiness plan, updated GMS rail strategy including priority investments and costings, and advice on organizational structuring that would inform creation of a comprehensive investment plan.

Output 1 was achieved. Studies were updated by determining investment cost and operations and maintenance cost of each rail link, identifying a feasible sequence of network development, and assessing the passenger and freight demand through development of a computerized transport demand model.

Output 2 was achieved. The TA developed criteria to assess and prioritize the financing options for the viable rail links by analyzing the economic and financial viability of each rail link and combination of links. Passenger and freight demand projections for 2025 and 2040, and economic and financial analysis of all individual links and feasible networks were carried out. The economic analysis included assessment of the following impacts: (i) consumer and shipper surplus, (ii) changes in unperceived vehicle operating costs, (iii) changes in GHGs and air pollution costs, (iv) changes in road trauma, (v) changes in road congestion cost, and (vi) changes in road damage costs. Other assessments included strategic assessments of land acquisition impacts and other social and environmental risks;<sup>2</sup>

Output 3 was achieved. Financing modalities were identified for the viable rail links. The typical range of available public and financing modalities available for railways that were assessed were: (i) Public enterprise – the whole project is implemented by the public sector as in many countries, (ii) Public implementation with an operating concession for train operations and maintenance of track and trains, (iii) Public implementation with a train supply and operating concession for trains with patronage and operating risk transferred, and (iv) Build-operate-transfer (BOT or similar such as Build Lease Transfer) – net cost contract for whole project with private sector; and;

Output 4 was achieved. Actions to bring the priority links to transaction stage identified, and feasibility and implementation readiness of network impact scenarios for alternate regional rail development confirmed.

The outputs were as envisaged in the TA report and were shown to remain valid and thus the TA is rated *efficient*. The TA experienced implementation delay, but targets were achieved within the budget. This was due to the time needed for consultation and facilitation with GRMA and the individual railway bodies, that was outside the control of ADB or the study team. Further, as shown above the resources were used efficiently to exceed the initial technical requirements of the TA.

The TA is rated *effective* as project outputs and activities were fully completed and satisfactory. Performance indicators were achieved.

#### **Overall Assessment and Rating**

Overall, the TA is rated *successful*, as TA's outputs and outcome were substantially achieved. The TA is rated *relevant* as the outcome was aligned with its development priorities of cross-border infrastructure development, promotion of sustainable transport modes, and improvement in subregional cooperation. Since TA indicators were achieved, it was assessed *effective*. The TA is *efficient* as its fund utilization was less than projected and all activities were completed, although experienced implementation delay. The GMRA's formal approval of the final report and the achievement of the outputs contributed strongly to the TA's envisaged long-term impact. The TA has also provided a GMS Transport Demand Model, for future use by the GRMA and other bodies that wish to study rail and multi-modal transport possibilities. Consequently, the effects of the TA are considered to be *likely sustainable*.

#### **Major Lessons**

Frequent consultations strengthened the network among GMRA members. The GMRA working groups were also well represented during consultation meetings, which contributed to the smooth implementation of the TA, institutions are better informed on railway development priorities, and were able to agree on future initiatives and opportunities. The TA has provided opportunities of keeping good relationship with practical-level personnel of railway institutions in GMS countries in terms of policy dialogue and identification of future pipelines. The multi-modal transport demand model provides practical opportunities to assist the GMRA and individual transport agencies in the GMS countries with transport strategy and feasibility studies. ADB should consider maintaining relationship with practical-level personnel of GMRA and transport agencies in future initiatives to encourage similar results.

#### **Recommendations and Follow-Up Actions**

ADB should consider providing further support to GMS countries for greater GMS railway connectivity, in the areas of (i) establishing the preferred organization structure of the GMRA; (ii) developing an operational readiness plan for GMRA; and (iii) updating the GMS railway strategy, based on the TA findings.

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<sup>2</sup> The assessment of these impacts was reported in the final report of the TA and as such comprise the Network Impact Report identified in the Technical Assistance Report.