



ADB



# GMS TRANSPORT SECTOR STRATEGY

Coast to Coast and Mountain to Sea:  
Toward Integrated Mekong Transport Systems





# **GMS TRANSPORT STRATEGY 2006–2015**

**Coast to Coast and Mountain to Sea:  
Toward Integrated Mekong Transport Systems**

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# Foreword

**T**he transport sector is critical to economic cooperation among the countries of the Greater Mekong Subregion (GMS). Soon after its inception in 1992, the GMS Economic Cooperation Program developed a GMS Transport Master Plan (1995) to encourage commercial exchange among the countries to spur development, generate employment opportunities, and assist GMS countries' programs to reduce poverty. The Transport Master Plan served well to develop the economic corridors that are the foundation of the GMS Program.

Now, in 2007, the Plan's recommendations have been largely carried out. Changes in policies, economic development, and technological advances, together with sustained population and economic growth have increased the demand for transport services and these services themselves have become more complex.

GMS leaders, during their Summits in Phnom Penh in November 2002 and in Kunming in July 2005, highlighted the key economic development role of a well-built, seamless, multimodal cross-border infrastructure that connects the GMS. They emphasized that strong transport systems and logistics are needed to deepen GMS cooperation, particularly in marketing the subregion as a single tourism destination and as both a market and a location for regional networks of consumption and production. Improved transportation networks to link the GMS with other countries and regions are also needed.

In October 2004, the Asian Development Bank provided technical assistance for a study to develop a GMS transport sector strategy, a successor to the 1995 Plan, that takes into account present and projected transport needs to 2015. The resulting strategy, which has been approved by the GMS countries, is presented here in summary.

Successful implementation of the strategy over the coming years will result in a truly seamless GMS transport network, connecting not only the GMS countries but also neighboring countries and regions for the benefit of all.



ARJUN THAPAN  
Director General

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# Preface

**T**he Greater Mekong Subregion (GMS) Transport Sector Strategy is the product of a painstaking process—assessment of past achievements and future prospects and challenges facing the sector, modeling and forecasting the future transport requirements of the subregion, and extensive consultations with transport and other officials of the GMS countries and with other stakeholders.

The strategy study commenced in March 2005 under the auspices of an Asian Development Bank (ADB) regional technical assistance (RETA No. 6195). The study team first conducted fact-finding and consultation missions in the GMS countries and prepared working papers covering various aspects of the study. An Interim Report was prepared in July 2005, including an initial long list of proposed interventions, which were then subjected to further review in country workshops and missions conducted in August–September 2005. A draft Final Report was submitted in November 2005, which was then reviewed by the countries at a major workshop held in Ho Chi Minh City, Viet Nam, in December 2005. The Revised Final Report was adopted by a Meeting of the GMS Subregional Transport Forum in Vientiane, Lao People’s Democratic Republic, in March 2006. The GMS governments subsequently endorsed the finalized strategy.

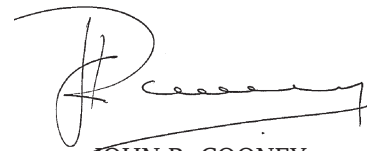
This publication presents the key elements of the Strategy and its proposed interventions. The details of the latter, i.e., substantive information on the investment and technical assistance projects under the Strategy, are contained in an interactive CD that comes with this volume.

Development of the strategy required considerable efforts by a great many people. The Infrastructure Division of ADB’s Southeast Asia Department (SERD) was responsible for the overall direction of the strategy formulation project. Peter Broch, Transport Economist, was the project officer. The study team consisted of experts from the consulting firm PADECO Co., Ltd., namely, Vaughan F. Corbett, Team Leader/Cargo Transport Specialist; Bruce P. Winston, Passenger Transport Specialist; Jeremy D. Whittle, Institutional Strengthening Specialist; Peter Mansell, Investment Program Specialist; Richard F. Di Bona, Transport Modeler; and David Husband, Macroeconomist.

The work of the study team was helped by excellent cooperation and inputs from transport officials from all the GMS countries, particularly the members of the GMS Subregional Transport Forum, who painstakingly reviewed the study team’s outputs and made substantive contributions to improving the study’s proposed policy and project interventions.

The Regional Cooperation and Country Coordination Division of ADB's Southeast Asia Department, through its Director Paul V. Turner, and Ronald Butiong, Economist (Regional Cooperation), provided guidance on broad subregional strategies and initiatives. Rodrigo Castelo and Aileen Pangilinan of the GMS Core Coordinating Team assisted in the strategy review process at workshops and meetings of the Subregional Transport Forum. Christine Linaza of the Infrastructure Division helped in coordinating all activities under the project.

The inputs of all these persons are gratefully acknowledged. I hope this strategy, which is the result of so much collective effort, will bear fruit in the coming years in the form of accelerated development of an efficient, comprehensive, and seamless GMS transport network that will be a vital instrument in achieving the vision of an integrated, harmonious, and prosperous GMS.

A handwritten signature in black ink, appearing to read 'John R. Cooney', written over a horizontal line.

JOHN R. COONEY  
Director  
Infrastructure Division  
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# Abbreviations

ADB	–	Asian Development Bank
ASEAN	–	Association of Southeast Asian Nations
CBTA	–	Cross-Border Transport Agreement
EU	–	European Union
GMS	–	Greater Mekong Subregion
JBIC	–	Japan Bank for International Cooperation
JCCCN	–	Joint Committee on Coordination of Commercial Navigation
Lao PDR	–	Lao People’s Democratic Republic
MRC	–	Mekong River Commission
NSEC	–	North–South Economic Corridor
NTFC	–	National Transport Facilitation Committee
NWC	–	Northwestern Economic Corridor
PRC	–	People’s Republic of China
SEC	–	Southern Economic Corridor
TAP	–	Technical Assistance Project

## NOTE

In this report, “\$” refers to US dollars.



# Background

## A. GMS Transport Cooperation

The transport sector was one of the first areas of cooperation under the Greater Mekong Subregion Economic Cooperation Program (GMS Program) when it began in 1992. At that time, the member countries were operating on a strategy of self-sufficiency. Their national borders were, for all practical purposes, closed. The GMS Program approach to regional development sought to improve the connections between the member countries, strengthen their ability to compete in the face of globalization, and promote a sense of community among them. The implication with regard to transport was the need for open borders to make trade easier among the countries to spur their development, provide employment opportunities and, hence, reduce poverty. In particular, improved roads on existing alignments were required to provide the necessary linkages between the countries.

In 1995, after an extensive study, the GMS Program adopted a Transport Master Plan. The Plan identified priority transport links—those that would generate the greatest and most immediate improvements in connecting the countries. An important addition to the Plan in 1998 was the economic corridor concept: a focus of infrastructure investments (e.g., energy, telecommunications, and tourism, as well as transport) in the same geographic space to maximize development impact. Three main corridors were identified—North-South, East-West, and Southern.

More recently, the six GMS countries signed the GMS Cross-Border Transport

Agreement (CBTA, see Box). The CBTA provides a basic framework (such as customs inspection, traffic rights, and infrastructure standards) for facilitating the cross-border movement of goods and people.

### GMS Cross-Border Transport Agreement

The Greater Mekong Subregion (GMS) Cross-Border Transport Agreement (CBTA) is a multilateral legal instrument among the GMS countries (Cambodia, People's Republic of China [PRC], Lao People's Democratic Republic [Lao PDR], Myanmar, Thailand, and Viet Nam) to allow easier movement of people, goods, and vehicles from one country to another. The CBTA entered into force on 31 December 2003.

The agreement provides for simplified inspection procedures, simplified visa formalities, exemptions from inspection of goods in transit, and exchange of traffic rights, such that vehicles registered in one country can be operated in the neighboring country.

## B. Investments and Achievements

Transport dominates the GMS Program infrastructure investments. Notable projects include the Phnom Penh–Ho Chi Minh City Highway, the East–West Corridor Project, the Northern Economic Corridor (Boten–Houayxay), the Yunnan Expressway (Chuxiang–Dali) and Southern and Western Yunnan Roads Development, the Guangxi Roads Development Project, the Siem Reap airport, and the Dali–Lijiang Railway Project.

*The GMS Program approach... to improve the connections between the member countries, strengthen their ability to compete in the face of globalization, and promote a sense of community*

*Sustained economic growth over the past decade has increased the demand for transport services and the complexity of the transport systems needed in the subregion*

The main achievements in the sector have been the emergence of transport corridors linking the subregion north-south and east-west. The plans have been made and been agreed on, most of the financial resources made available, and construction is at an advanced stage on all three corridors (Figure 1).

The priority given to transport improvements has accelerated strengthening of the system, both at the national and subregional level. The CBTA, which became operational in 2005—when the first border crossing under the agreement opened between Lao PDR and Viet Nam—is a milestone in facilitating access to markets and in improving the competitiveness of the subregion.

Civil aviation projects have improved connectivity and air safety in the subregion, as well as access to more distant destinations. Airports have been upgraded at Mandalay, Vientiane, Hanoi, Phnom Penh, Siem Reap, and several other locations. These improved airports, air safety, and more open skies<sup>1</sup> have stimulated business and tourism travel, encouraged investment, and generated new employment opportunities, even in remote areas of the subregion.

Other transport projects include upgrading inland water navigation systems, seaports, and the Dali–Lijiang Railway Project in Yunnan Province. Also, there have been many within-country transport initiatives that bear importantly on linking the subregion.

This combination of transport initiatives has cut transport costs, reduced travel times, and greatly improved confidence that the subregion can be an effective and efficient trade link for Asia.

<sup>1</sup> A completely “open skies” agreement refers to a situation in which airlines can fly internationally between cities of their choice in the countries concerned, at capacities, fares, and frequencies of their choice. However, such agreements include provisions to prevent domestic operation by foreign carriers and limit foreign ownership of domestic airlines.

## C. Changing Times, Changing Needs

The subregion has undergone rapid and dramatic change since 1995. The recommendations of the 1995 Transport Master Plan have been largely carried out and its objectives largely overtaken by general changes in policy, economic development, and technological advances. GMS countries have gone through significant transformation from mostly centrally planned to increasingly open and export-oriented market economies.

Sustained economic growth over the past decade has increased the demand for transport services and the complexity of the transport systems needed in the subregion. Efficient transport networks have become more important to subregional cooperation, in both absolute and relative terms, as tariff-based barriers to economic cooperation have generally declined.

The proportion of labor costs to total cost of manufactured exports has also declined with the result that GMS countries that capitalized on their low labor costs need to develop other advantages, such as reliable, low-cost transport. Improved competitiveness will depend critically on the ability to establish connectivity and an efficient transport network. Improved transport systems and logistics are needed to deepen GMS cooperation, particularly in marketing the subregion as a single tourism destination and as a market and site for regional networks of consumption and production.

Finally, improved transportation networks to link GMS and non-GMS countries, such as via a land bridge between South Asia and the Association of Southeast Asian Nations (ASEAN)–People’s Republic of China (PRC) free trade area, are needed.

The most recent expression of the vision, aspirations, and needs of GMS countries—ADB’s GMS Regional Cooperation Strategy and Program 2004–2008—calls for an integrated transport sector master plan beyond 2006 to evaluate demand for transport and prospects for strengthening multimodal linkages.

Figure 1: Greater Mekong Subregion: Three Original Economic Corridors



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# Transport Challenges: Role of a Transport Strategy

## A. Constraints to GMS Transport Flows

**D**espite substantial progress over the past decade, GMS still faces many constraints that restrict both passenger and freight transport flows, particularly cross-border flows.

For passenger flows, some of the main constraints are

- limited cross-border bus services;
- high road traffic accident rates, costing 2.1–3.2% of gross domestic product;
- reciprocity issues;
- limited cross-border rail access;
- different regulatory regimes on the different parts of the Mekong River;
- issues surrounding the operation of the cruise ship industry;
- remaining hardware issues in civil aviation; and
- slow development of air services agreements.

For freight flows, the key constraints include

- suboptimal parcel sizes of GMS shipments;
- missing road and rail links;
- lack of road maintenance;
- transshipment of cargo, including destuffing/restuffing of containers at borders;

- lack of complementary facilities, such as container depots, at many border crossing points;
- inadequate air cargo facilities;
- inadequate inland water transport conditions, such as channel improvements that are not maintained; and
- lack of links to other regions, such as South Asia.

Some of these constraints are being addressed under the CBTA. However, growth of traffic to 2015 will increase pressure at various points in the system and lower its efficiency.

## B. Need for a New Transport Strategy

### 1. Mandate from the Kunming GMS Leaders' Summit Declaration

Direction for a new transport sector strategy and program was provided by the GMS Leaders at their summit in Kunming in July 2005. They highlighted the key economic development role of a well-built, seamless, cross-border transport system covering all modes of transport, and of fully “connecting” GMS. Also, they agreed on the following needs for the transport sector:

*The GMS Leaders at their summit in Kunming in July 2005 highlighted the key economic development role of a well-built, seamless, cross-border transport system*



*There is almost universal agreement that a GMS-wide approach benefits all countries concerned*

- completing the transport corridors critical to linking the subregion and promoting trade and investment;
- coordinating strategies to ensure that transport corridors evolve into economic corridors, enabling agricultural diversification, industrialization, and the creation of employment opportunities;
- accelerating the implementation of “software” arrangements, including expediting the implementation of CBTA;
- expanding cooperation to include rail, air, and water transport; and
- identifying and developing critical transport linkages not only within GMS but also with neighboring countries in South and Southeast Asia.

The message of the Kunming Declaration pointed to a change in transport sector objectives: the Transport Master Plan aimed at enabling cross-border traffic. Now, the need was for a strategy to improve the capacity and efficiency of the emerging transport systems to meet rapidly increasing demand.

### **C. Role of a GMS Transport Strategy**

The GMS Program encourages member countries to cooperate for mutual economic benefit and to make the subregion internationally competitive. Program actions are

endorsed at the highest levels of leadership. Through the Transport Master Plan, national transport programs and plans of member countries have come to recognize the importance of undertaking GMS-related projects.

The Kunming Declaration represented a deepening of cooperation and gave the GMS Program a leading role in coordinating projects and in developing strategy.

These features distinguish the GMS Program from other regional cooperative initiatives concerned with aspects of GMS transport sector development.

For GMS countries to be able to compete internationally, their transport operating costs must be reduced. A key purpose of the GMS transport strategy is to help steer transport system development toward economically desirable objectives, without subverting its wider role. Even domestic transport projects are seldom undertaken purely for economic benefits. Priorities have to balance the desire for national prestige projects, the concerns of public pressure groups, equity issues, long-run network considerations, and the solving of pressing local issues. For international projects, economic benefits may play an even smaller role. Thus, there is particular need for a GMS-wide strategy that focuses on future needs and priorities.

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.



# GMS Transport Sector Strategy, 2006–2015

*The intent of the strategy is to develop seamless transport services on a fully connected and integrated GMS transport network*

**T**he GMS Transport Sector Strategy was developed through a study in 2004–2005 directed by the GMS Program under the Subregional Transport Forum and approved by member countries. It takes into account the principles of the Kunming Declaration of July 2005.

The intent of the strategy is to develop seamless transport services on a fully connected and integrated GMS transport network. There are five goals:

- To exploit synergies in the GMS transport system
- To move toward an open market and open borders for transport services
- To improve economic efficiency to reduce transport costs
- To complete the GMS transport network and improve links with South Asia
- To encourage use of different modes of transport (multimodalism)

## **A. Exploiting Synergies in the GMS Transport System**

The concept of a subregional transport system is still new and, until recently, the basic tools have been lacking: detailed network maps, transport model, and incentive to think GMS-wide. Several attempts have been made at subregional planning, including the Singapore–

Kunming Rail Link concept, the definition of the ASEAN highway network and GMS corridors, and the definition of investment corridors. These attempts must now be brought to the point where both national and subregional transport infrastructure projects are explicitly and routinely reviewed in terms of what they contribute to GMS as a whole, in addition to their local impact.

## **B. Opening Markets and Borders for Transport Services**

The worldwide trend is toward more open cross-border movement, exemplified by the European Union (EU), where borders have effectively been scrapped. The efficiency gains are considered to more than compensate for any resulting loss of control. Transport operators are generally free to work throughout EU and a genuine open market in transport services is in prospect. Similar, if less advanced, arrangements are being made in other areas. There are no apparent reasons why GMS should not follow suit. Market opening can be pursued purely as an economic concept. Clearly, there are gainers and losers and a strong argument in certain cases to protect infant industries in less-developed GMS countries. The overarching goal is, however, clear: policy should be directed toward furthering the open market concept.

### C. Improving Economic Efficiency to Reduce Transport Costs

In general, GMS transport systems are inefficient when judged by world standards. While quoted rates and fares are often low, so is the quality of international service, where available. Efficiency must be a key element in project and policy decision-making. To this end, the Strategy places great emphasis on human and institutional development, with a view particularly to encouraging multimodal traffic.

### D. Completing the GMS Network and Improving Links with South Asia

While much has been accomplished toward completing the primary GMS transport network, much remains to be done. The primary network will also need to be supported by a secondary network. The primary GMS network will be fully defined and a timetable made for its completion, while the secondary network will be outlined. The economic transformation underway in South Asia increases the priority of linking it with GMS, a linkage that has not been given as much attention as have intra-GMS links. This work must be coordinated with other organizations and countries involved in similar programs for links to South Asia. Network-wide planning is essential to make sure that domestic and subregional program plans are coordinated.

### E. Encouraging the Use of Different Modes of Transport

Encouraging the use of different modes of transport involves (i) promoting investment in, use of, and competition between transport modes on a given route/corridor, and (ii) making good connections between the different modes.

Deepening subregional cooperation may lead to formulation of a GMS-wide airport development strategy, which would rationalize the provision of new capacity. Clearly, national and local interests and prestige are involved, and economic issues are only one part of the decision-making process. However, a GMS airports committee analogous to cooperation in the railway sector would provide a useful forum for information exchange and commissioning studies, and might then develop further.

### F. Outcome

Successful implementation of the Transport Sector Strategy will result in lower costs to consumers and producers around the subregion, more competitive exports, reduced travel costs and times and, therefore, a more attractive investment climate. The better environment for production and trade will stimulate economic growth and further help in poverty reduction, improved living standards, and create new employment opportunities.

The distribution of these benefits will be enhanced by promoting economic activities along the corridors and including less-developed and often remote areas that are traversed by cross-border links, giving substance to the economic corridor concept. Provision of local infrastructure, such as utilities and secondary roads linking to the main routes, will help the more remote areas enter the mainstream economy through access to local and subregional markets and social services.

*The economic transformation underway in South Asia increases the priority of linking it with GMS*

*Successful implementation of the strategy will result in lower costs to consumers and producers, more competitive exports, reduced travel costs and times, and, therefore, a more attractive investment climate*



# Identification of Investment and Technical Assistance Projects

The shift from a plan that enabled cross-border traffic to a strategy for improving the capacity and efficiency of a subregional transport network implies that future investment and technical assistance projects should take into account

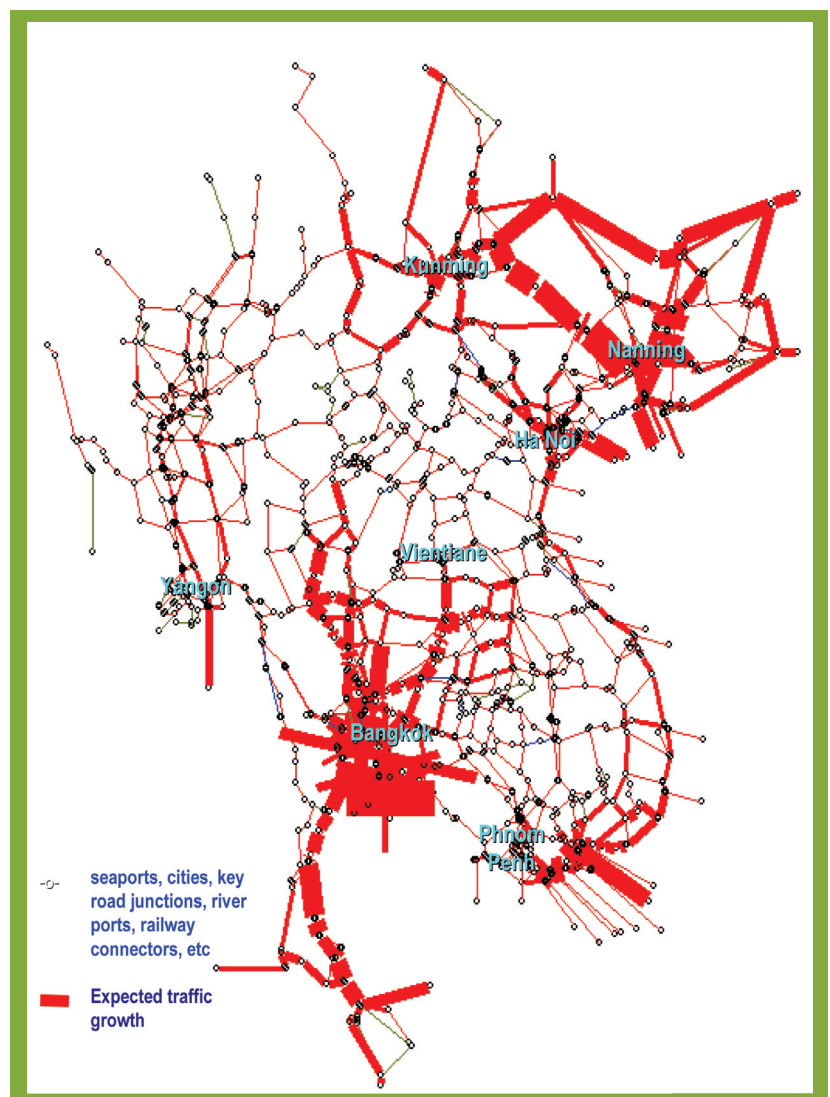
- end-user demand,
- internal and external subregional links, and
- efficiency in cross-border traffic.

These factors are discussed below.

## A. End-user Demand

End-user demand is the main consideration in prioritizing possible projects. A prototype transport model for the subregion, developed for the Strategy, suggests that forecast growth in demand to 2015 will be largely catered for by identified investment projects. However, given the pace of change in the subregion, planning will need to be more dynamic in future, based on continuous adjustment of project priorities in response to evolving demand (Figure 2).

Figure 2: Greater Mekong Subregion: Forecast Traffic Growth, 2004–2015



Source: Output of GMS Transport Model, PADECO Co., Ltd.

## B. Internal and External Subregional Links

### 1. Internal Subregional Links

Existing internal links will be prioritized for widening and broadening by identification of additional or expanded cross-border links.

### 2. External Subregional Links

The weak connection with South Asia will be addressed. Initiatives are already being taken bilaterally or multilaterally between some countries, and through agencies, such as the Ayeyawady–Chao Phraya–Mekong Economic Cooperation (ACMECS)<sup>2</sup> Bay of Bengal Initiative for Multisectoral Technical and Economic Cooperation (BIMSTEC),<sup>3</sup> Mekong Ganga Cooperation,<sup>4</sup> and the India–Myanmar–Thailand Transport Linkage.

## C. Efficiency in Cross-Border Traffic

GMS transport network optimization remains a work in progress. The network will continue to develop and improve in efficiency through the implementation of new projects, such as opening more border crossings, increasing network density, and providing multimodal facilities.

## D. Redefining GMS Economic Corridors

The strategy proposes a new GMS corridor network as indicated in Figure 3 and described below:<sup>5</sup>

1. North–South Corridor: Kunming–Bangkok
2. Eastern Corridor: Kunming–Ho Chi Minh City
3. East–West Corridor: Mawlamyine–Danang

4. Southern Corridor: Dawei–Quy Nhon/Vung Tau
5. Southern Coastal Corridor: Bangkok–Nam Can
6. Central Corridor: Kunming–Sihanoukville/Sattahip
7. Northern Corridor: Fangcheng–Tamu
8. Western Corridor: Tamu–Mawlamyine
9. Northeastern Corridor: Nanning–Bangkok/Laem Chabang

## E. Prioritization of Investment Projects

More than 150 new investment projects for the sector have been proposed under the new GMS Transport Strategy. Of these, 31 considered high-priority investment projects,<sup>6</sup> comprising 20 road projects, 2 railway projects, 4 airport projects, and 5 water transport projects. These have been further categorized as immediate implementation, ranking study, feasibility study, new corridor, and capacity building. Table 1 shows the high-priority projects in each group.

<sup>2</sup> Cambodia, Lao People's Democratic Republic, Myanmar, Thailand and Viet Nam.

<sup>3</sup> Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand.

<sup>4</sup> Cambodia, India, Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam.

<sup>5</sup> This new corridor network varies slightly from the one presented in the Final Report of the GMS Transport Sector Strategy Study as adjustments have subsequently been made on the latter to take into account other key road sections that were not included in the earlier configuration. In general, only the end-points of the corridors are indicated in the meantime that the coordinates are being further refined in consultation with the countries involved.

<sup>6</sup> Projects were prioritized in a two-step process: (i) scoring based on giving priority to improvement and rehabilitation projects, to projects already agreed between/among the countries concerned, and to projects of genuine subregional character; and (ii) incorporating the results of the study's economic and financial assessments, socioeconomic and environmental impacts, assessment of project conflicts and complementarities, and technical implementation issues.

Figure 3: New GMS Corridor Network



Source: Modified from Figure M-1 (Existing and Proposed GMS Corridors), GMS Transport Sector Strategy Study – Final Report, Volume 2 07-gms0109 hj 9 RM



**Table 1: High-priority Investment Projects**

Category	Basis of Determination	Project Identifier	Project
Immediate Implementation	Immediate implementation required without further study	A2.1-3 A3.4-2 B1-11 A3.2-3	Houayxay–Chiang Khong Third International Mekong Bridge Route 135–NR7 cross-border section Sisophon–Poipet/Aranyaprathet reinstatement NR33: Kampong Trach–Lork Viet Nam border missing 17-km section
Ranking Study	Top priority based on results of other ranking studies	A3.6-1 A3.6-3 A4-4 A6-3 A6-4	Route 14A: Junction Route 16–Cambodian border paving/reconstruction. Section B Pakse–Xekong Direct Route paving/reconstruction Mawlamyine–Mudon–Thanbyuzayat upgrading Route 4: (Lao PDR/Thailand Bridge at Nam Heuang) Ban Nakha–Ken Thao–Paklay–Sayaboury–Xieng Ngern Transport corridors in Lao PDR northern region
Feasibility Study	Currently under feasibility study, results available 2006	A2.2-2 A6-6 A6-9 B1-10 C1-1 C1-3 C3.2-1	Hanoi–Lao Cai expressway Thakhek–Nakhon Phanom Bridge Dau Giay–Lien Khuong expressway Phnom Penh–Sisophon/Phnom Penh–Sihanoukville rehabilitation Improvement of Savannakhet Airport for joint Thai/Lao PDR use Da Nang port upgrading, phase 2 Channel, navigation, and port improvements on Mekong and for access to port at Siem Reap; development of intermodal terminal at Khone Falls
New Corridor	New corridor strategic project, implementation timing primarily policy dependent	A2.3-1 A2.3-2 A3.3-2 A4-3 C3.2-3 D19	Baise–Longlin expressway Baise–Debao–Longbang Viet Nam border expressway NR66: Siem Reap–Preah Vihear–Stung Treng Thaton–Payagyi–Bagan–Kalay–Tamu/Moreh (India) Construction of floating port on Hamluong River Xieng Kok–Kyaing Lap Mekong Friendship Bridge

## F. Prioritization of Technical Assistance Projects

Forty technical assistance projects (TAPs) that can make transport infrastructure more effective in meeting overall GMS objectives have been proposed (Annex 2). The role of these TAPs is to help minimize the adverse effects of transport system differences between GMS countries. TAPs are focused on unifying service delivery capacities within GMS at a level optimum for meeting GMS objectives. Inevitably, the contribution of TAPs to transport efficiency within GMS varies across the range of identified projects—some build on existing programs; others seek to remedy specific constraints applicable to parts of the subregion; while still others are directed at the promotion of competitive advantage in a specific sector, such as tourism.

TAPs were identified and classified as CBTA-related, infrastructure-related, transport logistics-related, training, and others/cross-cutting. The classification is somewhat arbitrary—some TAPs could be placed in more than one category.

TAPs were prioritized according to their potential impact on GMS as a whole, rather than on individual GMS countries. Thus, the main consideration was relevance to GMS-wide themes, such as economic corridors and competitiveness. The resulting rankings, included in Annex 2, are time-sensitive—priorities change over time as development takes place. The priorities attached to TAPs relate to the beginning of the planning period and subsequent changes in priorities are catered for in the action plan.

**Table 2: Prioritization Classification of Technical Assistance Projects**

Priority	Basis of Determination
****	Projects that are needed to complete physical or policy initiatives that have already been initiated. This level of priority indicates that in the absence of the focus project, benefits from prior initiatives will be constrained.
***	Projects that are not directly linked to earlier initiatives but which either complement earlier initiatives or are now viewed as being essential to the realization of one or more overarching objective(s).
**	Projects that can make a significant contribution to the realization of overarching objectives.

Source: GMS Transport Strategy Study – Final Report, Volume 2, Chapter IX



# Action Plans, Outstanding Issues, and Next Steps

## A. Investment Projects

**A**nnex 1 provides an action plan for the high-priority investment projects (i.e., uncommitted, but *prima facie* of high priority). The annex does not include moderate-priority projects, which would be expected to be implemented primarily from 2008–2015 and the low-priority projects, some of which may be implemented after 2015. Shown are estimated project implementation cost, location, possible development partners, initiating responsibility, and indicative project implementation period. The “potential development partners” were mainly determined by reference to previous assistance and support and/or expectations of future assistance.

## B. Technical Assistance Projects

Annex 2 provides the action plan for TAPs. Expenditure will peak in 2007, declining thereafter so that by 2010, expenditure will be on the order of \$1 million–\$2 million per year. Estimated costs have been included for guidance purposes only; precise costing will be a function of the required TAP preparation work. The plan further indicates potential development partners, preliminary implementation responsibility, and the basis for adopting the specified implementation timing. Each of these matters is presented for preliminary illustrative purposes only and will be

subject to subsequent refinement as TAPs preparation progresses.

There may be some scope for further “packaging” of individual TAPs into more consolidated interventions, but in the majority of cases, this has not been addressed yet. Such considerations will be taken into account as implementation of the Strategy progresses.

## C. Outstanding Issues and Next Steps

### 1. Role of the GMS

With an increasing number of domestic, bilateral, and multilateral bodies now involved in project initiation and financing, the recommended roles for GMS to 2015 are to encourage pursuit of agreed strategic goals and objectives, encourage dialogue between the various bodies, raise analytic standards, and provide technical support (e.g., through support of the transport model and associated database), while focusing projects on improving economic efficiency in transport infrastructure provision and service operation.

### 2. Specification of a GMS Transport Network

GMS road, rail, inland water transport, air transport, and sea transport networks need to be defined. At this stage, they can only be identified as the sum of these networks in each of the GMS countries. A more comprehensive and detailed database of

*Among the recommended roles for GMS to 2015 is to encourage dialogue between the various bodies involved in project initiation and financing*

## *Fostering active participation by the private sector is needed*

the transport networks in and between GMS countries would be useful for this purpose.

### 3. Financing Issues

The Strategy does provide detailed financing proposals; these depend on a broad array of considerations that will become evident as the Strategy unfolds. It is appreciated that, given the breadth and magnitude of funding requirements, it will be critical to ensure that full funding potentials are mobilized. In particular, fostering active participation by the private sector is needed. In that regard, two TAPs—Practicalities of Private Sector Participation and Private Sector Participation in Road Maintenance—are considered crucial. These TAPs will provide assistance and practical expertise to encourage private sector participation in infrastructure projects. This depends on creating a business environment where risk apportionment is both transparent and focused on risk-bearing capacity. ADB and other development partners have already undertaken several initiatives within GMS to foster such conditions in the various transport subsectors. It is critical that the respective GMS governments take note of the lessons learned and move toward the implementation of indicated policies.

### 4. Multimodal Transport

The dominance of road transport throughout GMS is well entrenched and will be further encouraged by an improving road infrastructure. The case for developing a GMS rail network is not so evident, given the high cost involved, but the inherent efficiency of rail transport over medium to long distances makes development attractive. During the strategy period, the focus should be mainly on the efficient operation of domestic rail networks. There are significant intermodal possibilities, e.g., container train services on the Laem Chabang (Thailand) – Thanaleng (Lao PDR), Kunming/Nanning (PRC) – Haiphong (Viet Nam), and Phnom Penh (Cambodia) – Bangkok (Thailand) corridors.

Inland waterway developments will offer increased opportunities for multimodal transport, but these are primarily for specific markets and are constrained by network geography. Airport and port development is primarily driven by non-GMS considerations. Globalization is driving the need for logistics and optimization along the transport chain, as is the necessity of efficient transport. GMS support may, however, be most effective at the macro level: strategy-setting and focused support for enabling projects and policies.

### 5. Optimizing GMS Transport Investment

As the GMS transport networks come to be viewed as a single network, more consideration will be given to optimizing investment. This requires a defined scope of GMS investment and agreed investment goals. While there are many GMS-related projects, there is no agreed definition of what constitutes such a project. Defining the limiting conditions is quite difficult—many projects on GMS corridors, for example, do not end at a border and they handle only a small proportion of cross-border traffic.

Investment goals need definition in areas, such as (i) priorities between modes, areas, and strategies; (ii) the relative importance of opening new links against improving existing links; and (iii) specifications of long-term strategic projects to be implemented irrespective of economic ranking.

### 6. Training

The Strategy envisages training as an integral part of several TAPs (e.g., Training in Logistics, Training in Road Operations, Railways Management Improvement Project, and Further Development and Enhancement of the GMS Transport Model) rather than as a separate theme. Given the wide variation in training needs in GMS countries, time and resource constraints precluded the initiation of a full training needs assessment for the Strategy. The aim was to answer specific

transport-related needs rather than to identify and resolve generic issues. While this approach may not be ideal, it was felt preferable to link training to priority projects rather than to develop sector-wide training initiatives. Nevertheless, the need for structured training and the benefits to be realized through cross-fertilization within and between GMS countries are realized. In this context, the TAP on Institutional Strengthening of National Transport Facilitation Committees could be expanded to include the development of

mechanisms to promote and coordinate training programs within and between GMS countries.

#### 7. Results-based Framework for Monitoring

A Results Framework for the Strategy is included as Annex 3 of this report. The Framework is based on the Interim Greater Mekong Subregion Regional Cooperation Strategy and Program Update 2006–2008 Results Framework, issued in August 2005.

*As the GMS transport networks come to be viewed as a single network, more consideration will be given to optimizing investment*



### Annex 1: Action Plan for Investment Projects

Project No.	Project	Category	Estimated Cost/ Countries Involved	Timing of Project <sup>1</sup>											
				06	07	08	09	10	11	12	13	14	15		
A2.1-3	Houayxay Sai–Chiang Khong Third International Mekong Bridge	II	\$40 million/ Lao PDR and Thailand		■	■	■	■							
A3.4-2	Route 13S – NR7 cross-border section	II	\$5 million/ Lao PDR and Cambodia	■											
B1-11	Sisophon–Poipet/Aranyaprathet reinstatement	II	\$4 million/ Cambodia		■										
A3.2-3	NR33: Kampong Trach–Lork Viet Nam border missing 17-km section	II	\$4 million/ Cambodia		■	■	■								
A3.6-1	Route 14A: Pakse–Wat Phu–Lao PDR/Cambodia border 170 km paving/reconstruction. Section B.	RS	\$33 million/ Lao PDR			■	■	■	■						
A3.6-3	Pakse–Xekong Direct Route paving/ reconstruction	RS	\$34 million/ Lao PDR			■	■	■	■						
A4-4	Mawlamyine–Mudon–Thanbyuzayat upgrading	RS	\$10 million/ Myanmar		■	■	■	■							
A6-3	Route 4: (Lao PDR/Thailand Bridge at Nam Heuang) Ban Nakha–Ken Thao–Paklay–Sayaboury–Xieng Ngern	RS	\$50 million/ Lao PDR		■	■	■	■	■						
A6-4	Northern corridors in Lao PDR	RS	\$47 million/ Lao PDR			■	■	■	■	■					
A2.2-2	Hanoi–Lao Cai expressway	FS	\$715 million/ Viet Nam			■	■	■	■						

<sup>1</sup> This action plan was prepared in 2005, and projects shown as commencing in 2006 may not have proceeded as then scheduled.



## Annex 1: Action Plan for Investment Projects

Project No.	Project	Category	Estimated Cost/ Countries Involved	Timing of Project <sup>1</sup>										
				06	07	08	09	10	11	12	13	14	15	
A6-6	Thakhek–Nakhon Phanom bridge	FS	\$38 million/ Lao PDR and Thailand			■	■	■	■	■				
A6-9	Dau Giay–Lien Khuong expressway	FS	\$600 million/ Viet Nam		■	■	■	■	■	■				
B1-10	Phnom Penh–Sisophon/Phnom Penh–Sihanoukville rehabilitation	FS	\$40 million (loan element)/ Cambodia		■	■								
C1-1	Improvement of Savannakhet Airport for Joint Thai/Lao PDR Use	FS	\$3.5 million/ Lao PDR and Thailand		■	■								
C1-3	Da Nang port upgrading, phase 2	FS	To be determined/ Viet Nam		■	■								
C3.2-1	Channel, navigation, and port improvements on Mekong and for access to port at Siem Reap; development of intermodal terminal at Khone Falls (scope to be finalized)	FS	To be determined/ Cambodia		■	■	■							
A2.3-1	Baise–Longlin expressway	NC	To be determined/ PRC (Guangxi)		■	■	■							
A2.3-2	Baise–Debao–Longbang Viet Nam border expressway	NC	To be determined/ PRC (Guangxi)				■	■	■					
A3.3-2	NR66: Siem Reap–Preah Vihear–Stung Treng	NC	\$26 million/ Cambodia				■	■	■					
A4-3	Thaton–Payagyi–Bagan–Kalay–Tamu/Moreh (India)	NC	To be determined/ Myanmar and India, Thailand		■	■								

<sup>1</sup> This action plan was prepared in 2005, and projects shown as commencing in 2006 may not have proceeded as then scheduled.

Project No.	Project	Category	Estimated Cost/ Countries Involved	Timing of Project <sup>1</sup>										
				06	07	08	09	10	11	12	13	14	15	
C3.2-3	Construction of floating port on Hamluong River	NC	\$1.6 million/ Viet Nam	■										
D19	Xieng Kok-Kyaing Lap Mekong Friendship Bridge	NC	\$34 million Lao PDR, Myanmar		■	■	■	■						
A2.3-5	Chongzuo-Longzhou, upgrading to Class I	CP	To be determined/ PRC (Guangxi)			■	■	■	■					
A3.1-4	Bien Hoa-Vung Tau expressway	CP	\$679 million/ Viet Nam			■	■	■						
A6-10	Dali-Lijiang upgrading	CP	To be determined/ PRC (Guangxi)		■	■	■	■						
A6-11	Kunming-Wuding upgrading	CP	To be determined/ PRC (Guangxi)			■	■	■	■					
C2.1-3	New Kunming International Airport	CP	\$2.9 billion/ PRC		■	■	■	■						
2.1-5(a)	Expansion of Dali Airport	CP	\$19 million/ PRC		■	■	■	■						
C3.2-4	Laem Chabang Phase 2, construction of C and D container terminals	CP	To be determined/ Thailand	■	■	■	■	■						
D14	Guilin International Airport improvement	CP	\$12 million/ PRC (Guangxi)			■	■	■						
D21	Lancang-Mekong navigation channel improvement and maintenance project	CP	\$30.0-\$30.5 million/ All GMS countries		■	■	■	■						

<sup>1</sup> This action plan was prepared in 2005, and projects shown as commencing in 2006 may not have proceeded as then scheduled. GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China, II = Immediate Implementation, FS = Feasibility Study, RS = Ranking Study, NC = New Corridor, CP = Capacity Building

## Annex 2: Action Plan for Technical Assistance Projects

TAP No.	Project	Category	Estimated Cost/ Countries Involved	Timing of Project <sup>1</sup>										
				06	07	08	09	10	11	12	13	14	15	
<b>CBTA Related</b>														
TAP 1	Implementing the GMS Agreement to Facilitate the Cross-Border Movement of Goods and People, Phase 2	****	\$0.86 million/ All GMS countries	■	■	■								
TAP 2	"Fine-Tuning" of the GMS Cross-Border Transport Agreement	***	\$2.00 million/ All GMS countries	■	■	■	■	■	■	■	■	■	■	■
TAP 3	Processing and Facility Improvements at Border Crossing Points	***	\$1.00 million for TA and \$20.00 million for construction/ All GMS countries	■	■	■	■	■	■	■	■	■	■	■
TAP 4	Updating or Improving Existing Bilateral Railway Agreements and/or Amending the GMS Cross-Border Transport Agreement To Cover Cross-Border Railway Transport	***	\$0.10 million/ All GMS countries	■	■									
TAP 5	Project to Establish a Legal Framework for Cross-Border Navigation on the Mekong River ["Navigation Without Frontiers", a motto adopted by the Mekong River Commission]	**/**	\$0.10 million/ Cambodia and Viet Nam (and possibly Thailand and Lao PDR)		■	■	■							
TAP 6	Establishment of Issuing and Guaranteeing Organizations under the GMS Cross-Border Transport Agreement	****	\$0.30 million/ All GMS countries	■	■	■		■	■	■				
TAP 7	Inclusion of a Substantive Health and Sanitary/ Phytosanitary (SPS) Regime in the Cross-Border Transport Agreement	***	\$0.20 million/ All GMS countries/	■	■	■								
TAP 8	Phased Liberalization of Visa Regimes for Travelers	****	\$5.00 million/ All GMS countries	■	■	■	■	■	■	■	■	■	■	■
TAP 9	Specification of Transit Charges To Be Implemented Under Protocol 2 of the Cross-Border Transport Agreement	****	\$0.15 million/ All GMS countries	■	■									

<sup>1</sup> This action plan was prepared in 2005, and projects shown as commencing in 2006 may not have proceeded as then scheduled.

TAP No.	Project	Category	Estimated Cost/ Countries Involved	Timing of Project <sup>1</sup>										
				06	07	08	09	10	11	12	13	14	15	
TAP 10	Establishment of a Third-Party Motor Liability Insurance Regime	***	\$0.10 million/ All GMS countries	■	■									
TAP 11	Institutional Strengthening of National Transport Facilitation Committees	****	\$0.30 million/ All GMS countries	■	■									
TAP 12	Support for Harmonization of GMS Road Signs and Signals	***	\$0.12 million/ All GMS countries		■	■								
TAP 13	Practicalities of Private Sector Participation in Transport Infrastructure	***	\$0.20 million/ All GMS countries		■									
TAP 14	Cooperation between the ADB-ASEAN Regional Road Safety Program and the PRC	*	To be determined/ All GMS countries	■	■	■	■	■	■	■	■	■		
TAP 15	HIV/AIDS Component for all Road Transport Projects in the GMS	****	\$1.00+ million/ All GMS countries	■	■	■	■	■	■	■	■	■	■	■
TAP 16	Road Maintenance Initiatives for Cambodia, Lao PDR, Myanmar, and Viet Nam	**	\$1.50 million/ All GMS countries		■	■	■							
TAP 17	Private Sector Participation in Road Maintenance	**	\$0.90 million/ All GMS countries		■	■	■							
TAP 18	Revisiting of the Feasibility Study for the Singapore-Kunming [Nanning] Railway Link Project	*	\$2.00 million/ All GMS countries/								■	■		

<sup>1</sup> This action plan was prepared in 2005, and projects shown as commencing in 2006 may not have proceeded as then scheduled.

## Annex 2: Action Plan for Technical Assistance Projects

TAP No.	Project	Category	Estimated Cost/ Countries Involved	Timing of Project <sup>1</sup>											
				06	07	08	09	10	11	12	13	14	15		
TAP 19A	Upper (Lancang-)Mekong River Channel Navigation Improvement and Maintenance Project	***	\$5.00 million/ PRC, Myanmar, Lao PDR, and Thailand												
TAP 19B	Lower Mekong River Channel Navigation Improvement and Maintenance Project	***	\$10.00 million/ Cambodia and Viet Nam												
TAP 20	GMS Airports Development Project	**	To be determined/ All GMS countries												
TAP 21	Rail Maintenance in Cambodia	*	\$0.30 million/ Cambodia												
TAP 22	GMS Andaman Sea/Indian Ocean Deep Sea Port Study for Myanmar	***	\$0.50 million/ Myanmar												
TAP 23	Training in Logistics	***	\$0.30 million/ All GMS countries												
TAP 24	Development of Inland Container Freight Depots	*	\$0.30 million/ All GMS countries												
TAP 25	Cambodia FF Competitiveness Project	N/A	Consolidated with TAP 2												

<sup>1</sup> This action plan was prepared in 2005, and projects shown as commencing in 2006 may not have proceeded as then scheduled.

TAP No.	Project	Category	Estimated Cost/ Countries Involved	Timing of Project <sup>1</sup>											
				06	07	08	09	10	11	12	13	14	15		
TAP 26	Training in Road (Passenger and Freight) Transport Operations (“Knowledge Across Frontiers”)	**	\$0.30 million/ All GMS countries				■	■	■	■					
TAP 27	Upgrading of Inland Water (Passenger and Freight) Transport Industry	**	\$0.10 million/ All GMS countries			■									
TAP 28	Railways Management Improvement Project	*	\$1.50 million/ Cambodia and Myanmar		■	■	■	■							
TAP 29	Development of Traffic Engineering Capacity in Myanmar	Noted	N/A												
TAP 30	Development of Highway Engineering Capacity in Myanmar	Noted	N/A												
TAP 31	Financial and Economic Assessment Expertise in Myanmar	Noted	N/A												
<b>Others/ Cross-Cutting</b>															
TAP 32	Transformation of Transport Corridors into Economic Corridors	****	\$5.0 million/ All GMS countries	■	■	■	■	■	■	■	■	■	■	■	■
TAP 33	Further Development and Enhancement of the GMS Transport Model	****	\$0.35 million for Version 2 and up to \$1.00 million for Version 3/ All GMS countries	■	■	■									

<sup>1</sup> This action plan was prepared in 2005, and projects shown as commencing in 2006 may not have proceeded as then scheduled.

## Annex 2: Action Plan for Technical Assistance Projects

TAP No.	Project	Category	Estimated Cost/ Countries Involved	Timing of Project <sup>1</sup>											
				06	07	08	09	10	11	12	13	14	15		
TAP 34	Development of Cross-Border Scheduled Bus Routes	**	Cost from national budgets/ All GMS countries												
TAP 35	Marketing and Container Train Concessions between Laem Chabang, Thailand and Thanaleng, Lao PDR	**	\$0.50 million/ Thailand and Lao PDR												
TAP 36	Promotion of Marketing Functions for GMS Ports	**	\$0.05 million/ All GMS countries but especially those with sea ports												
TAP 37	Promotion of Short Sea Shipping Services	**	\$0.50 million												
TAP 38	TA on Transport Requirements for the Development of Tourism	**	\$1.00 million–\$2.00 million/ All GMS countries												
TAP 39	Sea Cruise Development in Cooperation with ASEAN	*	\$0.50 million/ All GMS countries												
TAP 40	Phased Implementation of Open Skies	***	\$0.50 million/ All GMS countries												

Continuous
  Intermittent
  Possible 2<sup>nd</sup> Phase
  Phased Implementation

<sup>1</sup> This action plan was prepared in 2005, and projects shown as commencing in 2006 may not have proceeded as then scheduled.

### Annex 3: GMS Transport Sector Strategy Results Framework

Long-Term Transport Sector Development Goals of GMS Countries	Key Transport Constraints to Achievement of Overarching Goals	Dominant GMS Strategic Theme and Overarching Goals		Projects to Support the GMS Transport Sector Strategy
		Outcomes that ADB Expects to Influence Through Its Interventions	Milestones/Tracking Indicators to Assess Strategy Implementation	
<b>Dominant Strategic Theme: Toward Seamless Transport Services on a Fully Connected and Integrated GMS Network</b>				
<ul style="list-style-type: none"> <li>Reinforcing Infrastructure for Development</li> </ul>	<ul style="list-style-type: none"> <li>Considerable Further Investment Needed to Complete Links and Nodes of GMS Transport Network</li> <li>Lack of Sustainable Infrastructure Maintenance in Some GMS Countries</li> <li>Continuing Impediments to Free Cross-Border Movement of People and Goods</li> <li>Logistics Industry Characterized by Uneven Development in GMS Countries</li> </ul>	<ul style="list-style-type: none"> <li>Denser More Connected GMS Network over All Modes</li> <li>Increasingly Sustainable Infrastructure Maintenance Throughout GMS Transport Network</li> <li>Free Movement of Goods and People Across GMS Frontiers</li> <li>Further Promotion of Multimodal Transport</li> <li>GMS Logistics Industry Rises to World Levels of Efficiency</li> </ul>	<ul style="list-style-type: none"> <li>Number of Route/Mode Alternatives between GMS Country Capital Cities and Economic Centers</li> <li>Number of through surface transport services linking GMS Country Capital Cities and Economic Centers</li> <li>Roads – Decreasing IRI and VOCs</li> <li>Railways – Decreasing Speed Restrictions</li> <li>Inland Waterways – Increasing Maintenance Dredging Volumes</li> <li>Average border passage time per passenger</li> <li>Average border passage time per consignment, vehicle, or rail conveyance</li> <li>Number of licensed cross-border intermodal transport operators between GMS Countries</li> <li>Cost per ton-kilometer for cross-border intermodal services</li> </ul>	<ul style="list-style-type: none"> <li>Identified Investment and Technical Projects</li> </ul>
<b>Overarching Goal 1 : Exploit Synergies in the GMS Transport System</b>				
<ul style="list-style-type: none"> <li>Initiatives to strengthen the subregional infrastructure linkages through a multisector and holistic approach</li> </ul>	<ul style="list-style-type: none"> <li>Lack of defined officially recognized GMS transport network</li> <li>Conceptual and institutional difficulties encountered in transforming transport corridors into economic corridors</li> </ul>	<ul style="list-style-type: none"> <li>Definition and official approval and adoption of GMS transport network</li> <li>Further development of GMS transport model</li> <li>Further integrated transport infrastructure investment project, production project investment and trade facilitation initiatives on Corridor transformation</li> <li>Create climate for further cross-border initiatives, such as use of Savannakhet Airport by Mukdahan passengers</li> </ul>	<ul style="list-style-type: none"> <li>Official adoption of approved GMS transport network</li> <li>Model adopted and maintained in up-to-date form by GMS countries</li> <li>Increased packaging of multisectoral interventions designed to assist in transformation of transport corridors into economic corridors</li> <li>Emergence of cross-border initiatives, such as use of Savannakhet Airport by Mukdahan passengers</li> </ul>	<p>TAP 4: Updating or Improving Existing Bilateral Railway Agreements and/or Amending the GMS Cross-Border Transport Agreement (CBTA) To Cover Cross-Border Railway Transport</p> <p>TAP 5: Project to Establish a Legal Framework for Cross-Border Navigation on the Mekong River [“Navigation Without Frontiers”, a motto adopted by the Mekong River Commission]</p> <p>TAP 18: Revisiting of the Feasibility Study for the Singapore–Kunming [Nanning] Railway Link</p> <p>TAP 19A: (Lancang)–Mekong River Navigation Improvement and Maintenance Project</p> <p>TAP 19B: Lower Mekong Navigation Improvement and Maintenance Project</p> <p>TAP 20: GMS Airports Development Project</p>



### Annex 3: GMS Transport Sector Strategy Results Framework

Long-Term Transport Sector Development Goals of GMS Countries	Key Transport Constraints to Achievement of Overarching Goals	Dominant GMS Strategic Theme and Overarching Goals		Projects to Support the GMS Transport Sector Strategy
		Outcomes that ADB Expects to Influence Through Its Interventions	Milestones/Tracking Indicators to Assess Strategy Implementation	
			<ul style="list-style-type: none"> <li>Exploitation of synergies arising from membership of ASEAN (5 GMS countries) or association (PRC)</li> </ul>	<p>TAP 21: Rail Maintenance in Cambodia</p> <p>TAP 27: Upgrading of Inland Water (Passenger and Freight) Transport Industry</p> <p>TAP 28: Railways Management Improvement Project</p> <p>TAP 33: Further Development and Enhancement of the GMS Transport Model</p> <p>TAP 34: Development of Scheduled Cross-Border Bus Routes</p> <p>TAP 35: Marketing and Container Train Concessions between Laem Chabang, Thailand and Thanaleng, Lao PDR</p> <p>TAP 36: Promotion of Marketing Functions for GMS Ports</p> <p>TAP 37: Promotion of Short Sea Shipping Services</p> <p>TAP 39: Sea Cruise Development in Cooperation with ASEAN</p>
<b>Overarching Goal 2: Move Toward an Open Market for Transport Services</b>				
<ul style="list-style-type: none"> <li>Fully Connect the GMS</li> <li>Improve Trade and Investment Environment</li> </ul>	<ul style="list-style-type: none"> <li>Continuing Restrictions on Rights of GMS Operators to Carry Out Commerce in Other GMS Countries</li> </ul>	<ul style="list-style-type: none"> <li>Increasingly open market for transport services across GMS borders over all modes</li> <li>Further development of intermodal services across borders</li> </ul>	<ul style="list-style-type: none"> <li>% increase in number of cross-border services licensed in each GMS country by mode and service type</li> <li>% increase in service frequency</li> <li>% increase in numbers of service types</li> <li>% Increase in number of entities licensed to carry out cross-border intermodal transport in each GMS country</li> </ul>	<p>TAP 1: Implementing the GMS Agreement to Facilitate the Cross-Border Movement of Goods and People, Phase 2</p> <p>TAP 2: "Fine Tuning" of the GMS Cross-Border Transport Agreement</p> <p>TAP 3: Processing and Facility Improvements at Border Crossing Points</p> <p>TAP 26: Training in Road (Passenger and Freight) Transport Operations ("Knowledge Across Frontiers")</p> <p>TAP 40: Phased Implementation of Open Skies</p>
<b>Overarching Objective 3: Facilitate Economic Efficiency to Reduce Transport Costs</b>				
<ul style="list-style-type: none"> <li>Increased Competitiveness for GMS Countries in World Markets</li> </ul>	<ul style="list-style-type: none"> <li>Lengthy border crossing times for passengers and freight at some GMS crossings</li> <li>Difficulties encountered in ensuring revenues raised for road maintenance actually</li> </ul>	<ul style="list-style-type: none"> <li>More operator-friendly regulatory and border crossing regimes</li> <li>Fully transparent road maintenance funding mechanisms in place throughout GMS</li> </ul>	<ul style="list-style-type: none"> <li>% reduction in variance in actual as opposed to quoted service times</li> <li>% reduction in ton-kilometer and passenger-kilometer rates on major GMS transports axes</li> <li>% reduction in passenger and freight passage times at selected border points</li> <li>% reduction in Road roughness and VOCs arising from enhanced maintenance</li> </ul>	<p>TAP 1: Implementing the GMS Agreement to Facilitate the Cross-Border Movement of Goods and People, Phase 2</p> <p>TAP 2: "Fine Tuning" of the GMS Cross-Border Transport Agreement</p> <p>TAP 3: Processing and Facility Improvements at Border Crossing Points</p> <p>TAP 6: Establishment of Issuing and Guaranteeing Organizations under the GMS Cross-Border Transport Agreement</p>

### Annex 3: GMS Transport Sector Strategy Results Framework

Long-Term Transport Sector Development Goals of GMS Countries	Key Transport Constraints to Achievement of Overarching Goals	Dominant GMS Strategic Theme and Overarching Goals		Projects to Support the GMS Transport Sector Strategy
		Outcomes that ADB Expects to Influence Through Its Interventions	Milestones/Tracking Indicators to Assess Strategy Implementation	
	<p>deployed for this purpose</p> <ul style="list-style-type: none"> <li>Lack of transit charges designed to recoup incremental maintenance costs occasioned by use of a member country's road network by road transport operators from other GMS countries</li> <li>Persistence of informal payments at various points in the transport chain</li> <li>Varying levels of service quality to shippers and passengers</li> <li>Relatively expensive services on some routes and through some facilities to shippers and travelers</li> <li>Limited involvement of private sector in provision and maintenance of infrastructure in several GMS countries</li> <li>Unsafe operating conditions and practices on many GMS road links</li> </ul>	<ul style="list-style-type: none"> <li>Equitable transit charging regime in force throughout the GMS</li> <li>GMS road authorities able to recoup incremental costs of road maintenance occasioned by operators from other GMS countries thus enhancing sustainability of road maintenance</li> <li>Further progress in improving governance and control of transport operations by GMS authorities</li> <li>Further involvement of private sector in operations of port, maritime, rail and road subsectors</li> <li>Further involvement of private sector in operations of port, maritime, rail and road subsectors</li> <li>Increased provision and maintenance of infrastructure by private sector</li> <li>Enhanced road safety</li> <li>Increased awareness of HIV/AIDS prevention</li> <li>Enhanced marketing of services available through GMS ports</li> </ul>	<ul style="list-style-type: none"> <li>Transit charges system adopted and perceived by users as equitable</li> <li>% reduction in informal charges paid on major GMS transport routes</li> <li>Reduction in variance in actual as opposed to quoted service times</li> <li>Increasing % of on-demand and contracted services</li> <li>% Reduction in ton-kilometer and passenger-kilometer rates on major GMS transports axes</li> <li>Increase in % of transport networks provided by private sector</li> <li>Increase in % of networks maintained by private sector</li> <li>% reduction in accident casualties, fatalities and property damage</li> <li>% reduction in new HIV/AIDS infections along major road links</li> <li>% increase in GMS port throughput in comparison to non-GMS alternatives</li> </ul>	<p>TAP 7: Inclusion of a Substantive Health and Sanitary/Phytosanitary (SPS) Regime in the Cross-Border Transport Agreement</p> <p>TAP 8: Phased Liberalization of Visa Regimes for Travelers</p> <p>TAP 9: Specification of Transit Charges To Be Implemented Under Protocol 2 of the Cross-Border Transport Agreement</p> <p>TAP 10: Establishment of a Third-Party Motor Liability Insurance Regime</p> <p>TAP 11: Institutional Strengthening of National Transport Facilitation Committees</p> <p>TAP 12: Support for Harmonization of GMS Road Signs and Signals</p> <p>TAP 13: Practicalities of Private Sector Participation in Transport Infrastructure</p> <p>TAP 14: Cooperation between the ADB-ASEAN Regional Road Safety Program and the PRC</p> <p>TAP 15: HIV/AIDS Component for all Road Transport Projects in the GMS</p> <p>TAP 16: Road Maintenance Initiatives for Cambodia, Lao PDR, Myanmar, and Viet Nam</p> <p>TAP 17: Private Sector Participation in Road Maintenance</p> <p>TAP 21: Rail Maintenance in Cambodia</p> <p>TAP 26: Training in Road (Passenger and Freight) Transport Operations ("Knowledge Across Frontiers")</p> <p>TAP 27: Upgrading of Inland Water (Passenger and Freight) Transport Industry</p> <p>TAP 32: Transformation of Transport Corridors into Economic Corridors</p> <p>TAP 33: Further Development and Enhancement of the GMS Transport Model</p> <p>TAP 35: Marketing and Container Train Concessions between Laem Chabang, Thailand and Thanaleng, Lao PDR</p> <p>TAP 36: Promotion of Marketing Functions for GMS Ports</p> <p>TAP 37: Promotion of Short Sea Shipping Services</p> <p>TAP 38: TA on Transport Requirements for the Development of Tourism</p> <p>TAP 39: Sea Cruise Development in Cooperation with ASEAN</p> <p>TAP 40: Phased Implementation of Open Skies</p>

### Annex 3: GMS Transport Sector Strategy Results Framework

Long-Term Transport Sector Development Goals of GMS Countries	Key Transport Constraints to Achievement of Overarching Goals	Dominant GMS Strategic Theme and Overarching Goals		Projects to Support the GMS Transport Sector Strategy
		Outcomes that ADB Expects to Influence Through Its Interventions	Milestones/Tracking Indicators to Assess Strategy Implementation	
	<ul style="list-style-type: none"> <li>High incidence of HIV/AIDS along major road links</li> <li>Limited understanding of marketing function in some GMS ports</li> </ul>			
<b>Overarching Goal 4: Complete the GMS Network and Improve Links with South Asia</b>				
<ul style="list-style-type: none"> <li>Enhanced Connectivity within GMS and to South Asia</li> </ul>	<ul style="list-style-type: none"> <li>Lack of Definition of GMS Primary and Secondary Transport Networks</li> <li>Links to South Asia not developed</li> <li>Limited mode choice for many GMS shippers and passengers</li> </ul>	<ul style="list-style-type: none"> <li>Definition of GMS Primary and Secondary Transport Networks</li> <li>Completion of links to South Asia in concert with other development partners</li> <li>Enhanced mode choice for GMS shippers and passengers</li> </ul>	<ul style="list-style-type: none"> <li>GMS Primary and Secondary transport networks defined and adopted by STF</li> <li>% of defined Primary and Secondary Transport Networks Completed and Maintained to an Acceptable Standard on a Sustainable Basis</li> <li>Links to South Asia defined and adopted for Development</li> <li>% completion of South Asian Links</li> <li>Modal choice survey on major GMS axes</li> </ul>	<p><b>TAP 22:</b> GMS Andaman Sea/Indian Ocean Deep Sea Port Study for Myanmar</p> <p><b>TAP 28:</b> Railways Management Improvement Project</p> <p><b>TAP 29:</b> Development of Traffic Engineering Capacity in Myanmar</p> <p><b>TAP 30:</b> Development of Highway Engineering Capacity in Myanmar</p> <p><b>TAP 31:</b> Financial and Economic Assessment Expertise in Myanmar</p> <p><b>TAP 39:</b> Sea Cruise Development in Cooperation with ASEAN</p> <p>Note: Refer to the list of finalized prioritized investment projects in Chapter XI.</p>
<b>Overarching Goal 5: Encourage Multimodalism</b>				
<ul style="list-style-type: none"> <li>Strengthen Subregional Infrastructure Linkages through a Multisector and Holistic Approach</li> </ul>		<ul style="list-style-type: none"> <li>Encourage the provision of and competition between modes on routes/subcorridors</li> <li>Increasing role for Intermodal Transport in Intra-GMS Shipments</li> </ul>	<ul style="list-style-type: none"> <li>As per milestones/tracking indicators for elements of work under "Complete the GMS Network and Improve Links with South Asia"</li> <li>% increase in number of intermodal operators licensed for cross-border trade</li> <li>% of Intra-GMS shipments shipped intermodally</li> <li>% of Intra-GMS tonnage shipped intermodally</li> <li>% of GMS Intermodal operators offering consolidation services</li> </ul>	<p><b>TAP 1:</b> Implementing the GMS Agreement to Facilitate the Cross-Border Movement of Goods and People, Phase 2</p> <p><b>TAP 4:</b> Updating or Improving Existing Bilateral Railway Agreements and/or Amending the GMS Cross-Border Transport Agreement (CBTA) To Cover Cross-Border Railway Transport</p> <p><b>TAP 5:</b> Project to Establish a Legal Framework for Cross-Border Navigation on the Mekong River ["Navigation Without Frontiers", a motto adopted by the Mekong River Commission]</p> <p><b>TAP 18:</b> Revisiting of the Feasibility Study for the Singapore–Kunming [Nanning] Railway Link</p> <p><b>TAP 19A:</b> (Lancang)–Mekong River Navigation Improvement and Maintenance Project</p>

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		Outcomes that ADB Expects to Influence Through Its Interventions	Milestones/Tracking Indicators to Assess Strategy Implementation	
				<p>TAP 19B: Lower Mekong Navigation Improvement and Maintenance Project</p> <p>TAP 20: GMS Airports Development Project</p> <p>TAP 21: Rail Maintenance in Cambodia</p> <p>TAP 23: Training in Logistics</p> <p>TAP 24: Development of Inland Container Freight Depots</p> <p>TAP 25: Cambodia Freight Forwarders (FF) Competitiveness Project</p> <p>TAP 27: Upgrading of Inland Water (Passenger and Freight) Transport Industry</p> <p>TAP 28: Railways Management Improvement Project</p> <p>TAP 35: Marketing and Container Train Concessions between Laem Chabang, Thailand and Thanaleng, Lao PDR</p> <p>TAP 36: Promotion of Marketing Functions for GMS Ports</p> <p>TAP 37: Promotion of Short Sea Shipping Services</p>

