



# Evaluation Study

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Reference Number: CAP: REG 2008-73  
Regional Cooperation Assistance Program Evaluation  
December 2008

## Greater Mekong Subregion: Maturing and Moving Forward

Operations Evaluation Department

Asian Development Bank

## ABBREVIATIONS

AADT	–	annual average daily traffic
ACMECS	–	Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy
ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
ADTA	–	advisory technical assistance
ASEAN	–	Association of Southeast Asian Nations
BCI	–	Biodiversity Conservation Corridors Initiative
CASP	–	Core Agriculture Support Program
CBTA	–	Cross-Border Transport Agreement
CDC	–	communicable disease control
CPI	–	consumer price index
CPS	–	country partnership strategy
CSP	–	country strategy and program
DMC	–	developing member country
EdL	–	Electricité du Laos
EIRR	–	economic internal rate of return
EOC	–	Environment Operations Center
EPA	–	environmental performance assessment
FIRR	–	financial internal rate of return
GDP	–	gross domestic product
GMS	–	Greater Mekong Subregion
GMS-BF	–	GMS Business Forum
GMS-SF	–	GMS Strategic Framework
GZAR	–	Guangxi Zhuang Autonomous Region
HCMC	–	Ho Chi Minh City
HDM	–	Highway Development Management
HIV/AIDS	–	human immunodeficiency virus/acquired immunodeficiency syndrome
HRD	–	human resource development
IIRSA	–	Initiative for Integration of Regional Infrastructure in South America
IRI	–	international roughness index
JSF	–	Japan Special Fund
Lao PDR	–	Lao People's Democratic Republic
LTSF	–	Long-Term Strategic Framework
M&E	–	monitoring and evaluation
MDG	–	Millennium Development Goals
MRC	–	Mekong River Commission
MTCO	–	Mekong Tourism Coordination Office
NGO	–	nongovernment organization
NH	–	national highway
NPV	–	net present value
OCR	–	ordinary capital resources
OED	–	Operations Evaluation Department
OREI	–	Office of Regional Economic Integration
PCR	–	project completion report
PPAR	–	project performance audit report
PPTA	–	project preparatory technical assistance
PRC	–	People's Republic of China
RCI	–	regional cooperation and integration
RCIS	–	regional cooperation and integration strategy

RCSP	–	regional cooperation strategy and program
RED	–	Road Economics Decision
RETA	–	regional technical assistance
RN	–	route national
RRP	–	report and recommendation of the President
RSDD	–	Regional and Sustainable Development Department
SEA	–	strategic environmental assessment
SERD	–	Southeast Asia Department
SFA-TFI	–	Strategic Framework for Action on Trade Facilitation and Investment
SIWG	–	Subregional Investment Working Group
STFWG	–	Subregional Trade Facilitation Working Group
TA	–	technical assistance
TWG	–	Tourism Working Group
UNDP	–	United Nations Development Programme
UNESCAP	–	United Nations Economic and Social Commission for Asia and the Pacific
UNWTO	–	United Nations World Tourism Organization
VOC	–	vehicle operating cost
WGA	–	Working Group on Agriculture
WGE	–	Working Group on Environment

#### NOTE

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

#### Key Words

regional cooperation, regional integration, gms, adb, asian development bank, greater mekong subregion, adb gms, cambodia, lao, myanmar, china, thailand, viet nam, development effectiveness, roads, roads maintenance, performance evaluation, transport, infrastructure, energy, tourism, trade facilitation, environment, agriculture, health, social

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The guidelines formally adopted by the Operations Evaluation Department (OED) on avoiding conflict of interest in its independent evaluations were observed in the preparation of this report. Although H. Satish Rao, Director General, OED, headed the East Asia Department, and Ramesh B. Adhikari, Director of Operations Evaluation Division 1, worked for the Southeast Asia Department, they were not involved in preparing, implementing, or supervising Greater Mekong Subregion projects. Mr. Adhikari supervised the report up to peer review. John Weiss and Carmencita Balbosa were the consultants. To the knowledge of the management of OED, there were no conflicts of interest among the persons preparing, reviewing, or approving this report.

## EXECUTIVE SUMMARY

### Introduction

The Greater Mekong Subregion (GMS) program, an activity-based subregional economic cooperation program, began in 1992 under the sponsorship of the Asian Development Bank (ADB). It covers six countries—Cambodia, Lao People’s Democratic Republic (Lao PDR), Myanmar, Thailand, Viet Nam, and Yunnan Province and Guangxi Zhuang Autonomous Region of the People’s Republic of China (PRC). ADB assumed the role of the GMS Secretariat as well as roles of a facilitator, financier, honest broker, and technical adviser. An independent evaluation study of the GMS program undertaken by the Operations Evaluation Department (OED) in 1999 found that overall progress in the first 7 years of operation had been satisfactory, but it raised concerns about the lack of focus of the GMS program and limitations on the availability of ADB resources for regional cooperation. Its lessons included, among others, the need to demonstrate “regional” impacts, the importance of providing linkages between the national and regional programs, and the necessity for ADB to have an exit strategy. Only about a third of the lessons have been adopted so far. Given the limited time lag between the establishment of the GMS program and the 1999 evaluation, it was not possible to draw inferences about the program’s impact.

The initial 10 years of the GMS program were characterized more by sector-specific initiatives rather than a holistic vision. It was not until November 2001 that the countries adopted a 10-year GMS Strategic Framework (GMS-SF) covering 2002–2012. Meanwhile, ADB developed a regional cooperation strategy and program (RCSP) in 2004 to complement country strategies and programming for 2004–2008. The overarching objective of the RCSP is supporting pro-poor sustainable growth. The ADB-wide regional cooperation and integration strategy of 2006 aims explicitly to move away from a focus on standalone projects and programs toward a more strategic approach.

At the request of the Southeast Asia Department, OED undertook a regional cooperation assistance program evaluation (RCAPE) of ADB’s support to the GMS program. It is the first RCAPE done by OED and will provide directional inputs toward the next RCSP for the GMS program. It evaluates ADB-cofinanced GMS operations during 1992–2007. It does not, however, evaluate the operations financed by other aid agencies or by GMS member countries, nor does it cover any GMS activities in Myanmar, where ADB has no operational activity. It uses the evaluation framework developed for country assistance program evaluations involving a combination of “top–down” and “bottom–up” perspectives. The counterfactual is reviewed in the assessment of ADB’s past value added.

### Study Findings

Member countries have benefited from subregional cooperation in the GMS, although tangible progress in terms of significant regional economic impact has been slow. From its outset, the GMS program was designed as a relatively flexible, activity-based program as opposed to a rules-based form of cooperation. This means that member countries collaborate on specific activities involving limited cooperation and limited lending to key sectors—principally roads and power infrastructure, and to a lesser extent tourism. ADB has provided 40% of the funds (about \$3.5 billion for GMS loans and special grants and about \$82 million for GMS technical assistance [TA]) for the ADB-sponsored GMS program, while another 35% has come from member countries and 25% more from other development partners.

The negative comments on some aspects of the GMS should not detract from the overall judgment that progress, while slow, has been positive. Despite problems in individual sectors and projects, ADB has played an important catalytic role, providing technical advice and financial support and, in the power sector, leveraging significant private sector funds. Naturally, difficulties and challenges remain. Infrastructure needs in the subregion are substantial and far exceed ADB's funding capacity. Private sector involvement outside the power and tourism sectors has been limited. Cross-border trade and tourist flows have been slow to emerge, and only limited progress has been made in terms of regional public goods such as mainstreaming environmental concerns into planning, and addressing the social impacts of infrastructure projects and labor migration. Using the tiered institutional structure of the GMS program (the Summit, ministerial meetings, Senior Officials Meeting, and working group meetings), the member countries have over the years been increasingly active in decision making regarding what activities the program should be focusing on, but have relied heavily on ADB's GMS Secretariat to take the responsibility for facilitating these forums, initiating their agenda, and providing funding.

Since the birth of the GMS program in 1992, ADB has helped nurture it from its nascent stage to adolescence stage. Better awareness of the benefits of regional cooperation and the importance of greater country involvement at the highest political level has been seen recently. Moving forward, ADB should take stock of the achievements of the maturing program and develop a revised GMS strategy for ADB's role over the next 10–15 years. The strategy should consider how to strengthen the capacities of developing member countries and regional institutions, expand opportunities for cofinancing, make coordination more effective, and bring greater clarity to operationalize regional cooperation in line with ADB's *Strategy 2020*.

The rest of this executive summary is devoted to two aspects: (i) assessment of past performance of the GMS program, which hitherto has been very dependent on ADB's institutional support; and (ii) identification of lessons and recommendations for the GMS program to move forward, with member countries gradually taking more responsibility. While ADB needs to continue its catalytic financier, honest broker, and technical adviser roles, it should also support building the capacity for the program to develop into adulthood, with member countries taking more responsibility for its organization and direction.

### **Strategic and Institutional (Top–Down) Performance Assessment**

**Strategic Assessment.** This is rated as “substantial” because of the strategic focus and alignment with ADB corporate strategies in the infrastructure areas, but not “high,” given the partial alignment in the tourism, health, and agriculture sectors. Alignment of the GMS RCSP with government and ADB priorities at the country level is clear in some sectors but not in others. In energy, GMS projects to expand electricity generation through hydropower development and to enlarge regional transmission interconnection are also priorities in national investment programs. While the prioritization of physical connectivity has been adequate, related “software” comprising harmonization of regulations, procedures, and standards has been slow to develop. Trade facilitation under the GMS program has now replaced the earlier bilateral approach, some of which have been piloted under the Cross-Border Transport Agreement (CBTA) initiative. The GMS agriculture program has very weak links with GMS economic corridors and has focused on a diverse set of topics.

**Institutional Assessment.** Overall, this is rated as “substantial.” ADB's involvement in activity rather than rules-driven cooperation is reflected in the current institutional arrangement. This arrangement enables ADB to be flexible and relatively informal. From the perspectives of country participation and resource mobilization, the rating is “substantial.” For capacity building,

the rating is “modest,” as programs have focused on individual training rather than capacity development. There is a recent trend toward greater country involvement in the GMS program in terms of both willingness to meet costs and support for policy initiatives. In energy, resource mobilization is “high” due to ADB initiatives in leveraging large sums of capital from the private sector and other development partners through the use of the public–private partnership modality. For transport and trade facilitation, the rating is “substantial” due to growing participation in and commitment by governments to GMS transport corridors. Customs departments are also introducing simplification and harmonization of procedures with a view to full implementation of the CBTA by 2010, although there are doubts whether this deadline is realistic. While the early development and implementation of the GMS environmental program was largely in the hands of ADB and nongovernment organization partners, national ownership of and commitment to the program has grown. The Working Group on Environment is now increasingly providing directions to its secretariat, the Environment Operations Center. With members of the GMS Working Group on Agriculture being unchanged over the last 6 years and regularly attending the meetings, institutional sustainability is being created and retained in GMS agriculture. Unfortunately, this statement does not describe the human resource development sector, partly because its working group has to contend with a broader sectoral scope, the mandates for which do not reside within a single government agency. While the training supported under the sector initiatives has been successful, training under the Phnom Penh Plan is rated “modest,” as programs are mostly national in nature and have focused more on key individuals in GMS governments than institutions. Efforts to improve the overall capacity of GMS institutions through the introduction of new working practices, organization structure, or roles and responsibilities have been weak.

**Value Addition.** In comparison with other ADB regional cooperation initiatives, the GMS program has fared well in its early phase of development, and the criterion is found “substantial” for many of the sectors assessed. But it is not “high,” as benefits are more national than regional. In general, the GMS countries’ share of trade among themselves, and especially with the PRC, has risen sharply over the past decade. The degree of openness to trade, as measured by the ratio of trade to gross domestic product, has also increased in most economies, and ADB assistance has contributed to these developments. GMS initiatives led to the more rapid expansion of the road corridor projects improving the connectivity in the subregion. The GMS transport and trade facilitation program has already created a demonstration effect and is being replicated in other subregions in Asia. While some of the GMS projects could still have been realized without ADB support, funding limitations in the national budgets or other external financing would have created delays and reduction in the size of the projects. Furthermore, ADB financing of transport projects in Cambodia, Lao PDR, and Viet Nam has been concessionary and additional to the national program.

For energy, the GMS has facilitated the export of hydropower from Lao PDR to Thailand and has focused on optimization of the subregion’s energy resources through discussions on power trading. The program also has mobilized additional financial resources for the Lao PDR. For tourism, the GMS has provided a platform for collaborative solutions to marketing the subregion and developing tourism circuits, for example, based on the world heritage sites. Its main failing is the inability to resolve the common GMS visa issue, which would provide a significant boost to subregion-wide tourism. For environment, the key additional contribution of the GMS program is the leveraging of additional external support, promoting the involvement of international nongovernment organizations, and introducing environmental planning methodologies to member governments.

**ADB Performance.** In the early years of the GMS program, ADB added value by bringing various parties with different aspirations together at the same table. ADB has effectively played a catalytic role in the GMS, encouraging and supporting member countries with technical expertise while providing its own funding and leveraging that of other agencies. Many useful partnerships have been built with other development agencies, drawing on their experience and expertise to implement the GMS program. Thus, ADB performance is assessed as “substantial” with room for improvement.

There are areas of concern that cut across individual sectors: Capacity development under the various sectors and in core areas of regional cooperation has been modest. There have been difficulties both in management and administration within ADB and in coordination at the country level between GMS and national projects. There have also been above-average delays in the implementation of GMS loans, special grants, and regional technical assistance (RETA) across all sectors for a variety of reasons, some outside the control of ADB. Coordination across sectors has also been weak, although initiatives are emerging to address this problem (e.g., between environment and agriculture or tourism). Coordination weakness also relates to the lack of synergies between the GMS working groups and forums. An earlier evaluation study indicated that there had been little interaction between different sectors and their working groups, and this problem is identified again in this evaluation. ADB coordination with other aid agencies has been “substantial,” although there are gaps in specific sectors. In environment, coordination with a large number of agencies has led to accumulating substantial resources for the Core Environment Program.

The bulk of GMS lending has been for transport (principally roads), followed by energy, with small amounts for tourism. RETA operations, in addition to those that fund the GMS Secretariat and the Phnom Penh Plan, have been spread more widely, with the environment sector accounting for a major share of RETA funds. A key part of ADB’s catalytic role has been in leveraging funds for GMS activities, and here the rating is “high.” A large amount of private sector funding was obtained for the two hydropower projects in the Lao PDR, where ADB provided only 2% of project costs for the Nam Theun 2 Hydroelectric Project and 22% for the Theun–Hinboun Hydropower Project.

### **Project and Operational Performance (Bottom–Up) Assessment**

Neither the 1992 GMS-SF nor the 2004 RCSP specified a results framework or indicators to assess achievements on the ground. Baseline data were available for only a handful of projects. This study used primary data from specific project sites and secondary data and descriptive information for the bottom–up assessment.

**Relevance.** The GMS program is assessed as “relevant.” Increasing country involvement of the program shows its continued relevance. The focus on transport projects indicates that the portfolio has drawn on ADB’s comparative strength. Recently, ADB provided assistance for railways in Cambodia, PRC, and Viet Nam, and this is seen as positive, taking into account the need for reducing congestion on the roads as well as enabling bulk freight traffic by railways. GMS countries have given increasing attention to issues such as the equitable distribution of tourism benefits and poverty reduction. Opportunities identified for regional cooperation on energy have included agreements and complementary investments for equitable exploitation of common hydropower potential and petroleum resources, and intercountry transmission of energy supplies. The Mekong Tourism Development Project supported regional tourism development in Cambodia, Lao PDR, and Viet Nam, addressing critical bottlenecks such as poor infrastructure and costly border crossings due to stringent visa requirements. It is, however, necessary to ask



the question, “How does ADB continue to add value to the GMS program in the longer term?” The more successful the program becomes in terms of country involvement, the more critical will be the need for devising a coherent strategy for ADB to gradually transfer some of its responsibilities in the GMS program to the member countries.

**Effectiveness and Efficiency.** These are assessed as “effective” and “efficient.” Projects that have been completed are of good quality. Travel time on project roads has been reduced by 50% after road improvement, although mainly benefiting national traffic, as international traffic has been slow to grow. Border-crossing time in Cambodia, Lao PDR, and Viet Nam has been reduced, and there is potential to improve this substantially. Project roads also allow fuel savings, which is a benefit that is difficult to value at this time of uncertainty in the oil market. For energy, there are high economic returns to the Theun–Hinboun Hydropower Project and marginal (but probably underestimated) returns to the Nam Leuk Hydropower Project. Cross-border trade and tourist flows have been slow to emerge, and limited progress has been made in incorporating environmental concerns in planning. The great number of subprojects identified under the GMS agriculture program raised government expectations about the scope of the Working Group on Agriculture work, diluted its focus, and overstretched resources. Capacities for prevention and surveillance of communicable diseases has been developed in key border provinces.

**Sustainability.** This is assessed as “likely.” Rehabilitated project roads are in good condition, but they will require major resurfacing on a 6–7 year cycle. Most of the GMS countries have developed policy frameworks to focus on road maintenance and have initiated measures to improve allocations for maintenance. In the energy sector, measures put in place to mitigate risks to sustainability are considered adequate. The recalculated financial returns from the two sample hydropower projects remain positive (22% and 4%). In the tourism sector, the impacts are modest. In the environment sector, some GMS countries formally adopted certain Core Environment Program instruments. In the agriculture sector, project activities do not seem to be sustainable, given the lack of working agreements with long-term partners or financial and technical capacity. However, the involvement of partner organizations in almost all GMS program sectors increases the number of stakeholders, which contributes toward sustainability.

**Impact.** The assessment of impact is “modest.” At the project level, ADB assistance has resulted in some increased economic activity in the form of new industries and special economic zones being planned along roads, although these have been rather slow to develop. In addition, the border communities have benefited from new livelihood opportunities in local cross-border trade as well as access to health services at the local level. Unfortunately, transport and trade have not grown as rapidly as expected. At the national level, the impact on small-sized economies—Lao PDR and Cambodia—has been higher, since a larger proportion of their trade uses the border points on the Southern Corridor and East–West Corridor. The impact on larger economies such as Viet Nam is relatively less due to the existence of other trade points, including seaports. Direct non-economic impacts of GMS transport, trade, and tourism projects are a concern, in particular the failure to integrate environmental considerations into road project planning. The GMS Transport Sector Strategy, 2006–2015 is silent on how it will handle social and environmental issues for GMS transport projects. This gap becomes more apparent in light of the impacts already seen due to completed projects, e.g., illegal logging, wildlife trade, and deforestation. Adverse resettlement impacts have also emerged in recent months, e.g., in Cambodia. With the improvement of roads, there has been a distinct deterioration in road safety. In the energy sector, exports of electricity from Lao PDR to Thailand, taken as a percentage of the Lao PDR gross domestic product, rose from 1.6% in 1994 to 6.5% after the sample projects were completed. Thailand has gained greater access

(currently 1.4% but projected to increase to 8.5% by 2021) to a clean and low-cost power source to support its growing economy.

Considering the “successful” ratings of both the top–down and bottom–up evaluations, the overall assessment of the GMS program is “successful.”

## Conclusions

The study concludes that there is a need to take stock of the achievements so far and that the time has come to review GMS strategy and organizational arrangements going forward. Any consideration of future institutional arrangements needs to be predicated on a clear understanding of the future purpose of the GMS program and the role of ADB within it. The more successful the program becomes in terms of country involvement, the more critical will be the need for devising a coherent future strategy for the GMS program. Having achieved this level of success, ADB should try to explore ways of adding even more value by encouraging the GMS program to move to the next level of maturity, where the members can take on more responsibilities. While the members have increased their capacity to prioritize the activities and determine the path taken by the GMS program, they have yet to take on more responsibilities for organizing and managing the various forums. To this end, the differing capacities of the various member countries need to be strengthened through capacity development programs.

The study suggests different ways that ADB can continue to add value. First, ADB should promote focusing on the “regional” nature of the program by clearly defining the additional regional benefit and costs in contrast to “national” benefits and costs. Regional benefits accrue through extending domestic markets, reaping the benefits of economies of scale, sharing research knowledge, and developing more of (pure and mixed) regional public goods compared with club goods. Second, having provided ample support for connectivity in the past, ADB can now add further value by also providing additional support at the policy level, for example, in finalizing the CBTA, mainstreaming environment concerns in planning, and facilitating regional power trading or regional bond market. Third, building on the trust that has been carefully nurtured over the years, with the long-term sustainability of the regional cooperation effort in mind, ADB can facilitate the formulation of a strategy to gradually make the GMS institutional structure more dependent on the member countries. This does not mean that ADB should withdraw from its other roles that bring in ADB’s ability to draw good practices from its international experience. ADB’s roles of financier, catalyst, honest broker, technical adviser, and trainer should continue to support regional cooperation (as indicated in ADB’s Charter) as long as the GMS program needs it. Taking on this challenge of further adding value needs to be done gradually in consultation with the GMS member countries, taking into account their differing capacities and aspirations, and providing support where necessary to build the national capacities that are needed to enhance the sustainability of regional cooperation. The next RCSP is a good opportunity to develop a strategy that can support these “value additions” from ADB.

With the goal of encouraging ADB to move from a successful program that will continue to remain successful in the next decades by adding value, the remainder of this executive summary highlights (i) issues that are emerging, (ii) lessons drawn from the past, and (iii) directional recommendations for the future.

## Issues

**Definition of Regional Project.** The study shows (Table 1 in the main text) that up to now, the definition of what constitutes a regional GMS project remains confusing, despite the

discussion of this issue in the 1999 evaluation of the GMS program. The criteria for defining a regional project needs to include a description of the overall regional benefit that is greater than the sum of national benefits. For example, the CBTA, regional energy trade, and Asian bond market initiatives can produce excellent regional benefits. Bringing greater definitional clarity to national-level activities and subregional ones is important, particularly in light of Asian Development Fund and country resources being earmarked for regional activities.

**Institutional Structure.** Given that the GMS is not a rule-based organization, many subregional units such as the Mekong Tourism Coordination Office and the Environment Operations Center have no legal standing or sustainable funding arrangements. While details of appropriate legal structure, funding avenues, and rule-based arrangements needed may vary across sectors, there is a need to begin reviewing the institutional arrangements for software issues such as the CBTA, power trading, and monetary cooperation. The legal, financial, and institutional arrangements for these will have to be determined through informed pragmatic discussions among the members with the support of ADB. Care needs to be taken to avoid overinstitutionalizing or applying one-size-fits-all rules-based arrangements that may jeopardize the flexible arrangements of the activity-based regional cooperation that has led to the success of the GMS program up to now.

**Positioning of Agriculture.** The GMS RCSP refers to the provision of TA in agriculture, given that a majority of the GMS population depends on that sector for both food and livelihood. However, it does not provide parameters for positioning cooperation in agriculture. The original aim in including the sector in the GMS-SF was to link agriculture initiatives with the road corridors and trade facilitation. However, the current small agriculture program has very weak links with the corridors and has focused on a diverse set of topics. Despite the recent focus on the Core Agriculture Support Program, ADB's involvement in agriculture in the GMS has been very modest. Given its weak relevance to current ADB strategic priorities and the weak links with the corridors, continued GMS assistance to the sector needs examination.

## Lessons

**Integrated Approach is Important.** ADB's involvement in nine GMS sectors suggests a fragmented approach. Gradually focusing on fewer niche projects that truly coincide with ADB's known strengths could effectively position ADB as a strategic GMS partner. Past experience shows that the impact of spreading individual projects across several sectors has been modest. The processing and implementation of fewer but larger integrated projects with a multisector approach focused on developing economic corridors could be considered (para. 148).

**Provide a Balanced Program.** Learning from past experience as a technical adviser, there is a need to strike the proper balance between supply (strategic focus) and demand (the region's changing needs) for GMS projects (para. 149).

**Develop Tools to Assess Effectiveness.** ADB's limited experience with partner organizations in the GMS has been mostly positive, but there have been opportunities when the partners' accountability for demonstrating value added could have been strengthened. ADB may consider tools to analyze cost-effective regional programs, since few projects include indicators of integration (most relate more to national achievements), and even fewer identify the associated risks (para. 150).

**Investment Climate is Important for Private Sector.** Past experience shows that involving the private sector to fund the unfulfilled demand for subregional investment is difficult.

Attracting the private sector will require improving the investment climate through strengthening the compatibility of various regulatory and legislative requirements across the GMS. Country-level program loans can support the policy, and regulatory reforms to accompany the “hard” connectivity investments, as well as TA that support “soft” institutional and procedural arrangements (para. 151).

## Recommendations

Key recommendations are summarized below.

Key Recommendations	Responsibility	Proposed Target Date
<b>1. Improve strategic and institutional performance</b> (i) <b>Bring greater clarity to translation of <i>Strategy 2020</i> for RCI.</b> Explicit guidance is needed on whether ADB should finance projects in sectors that are not specifically identified as core areas of operation, even if such sectors are considered by the DMCs themselves as very important in advancing their RCI agenda (para. 157).	ADB Management	2009
(ii) <b>Take stock and chart a revised GMS strategy with a holistic approach.</b> Drawing on the demonstration effects of connectivity through infrastructure development, private sector participation should be encouraged. ADB needs to focus more on regional public goods and mitigate the negative impacts of connectivity (para. 153).	SERD	Next RCSP
(iii) <b>Develop and strengthen DMC and regional institutions under the revised GMS strategy.</b> The timing for establishing regional bodies to take on responsibility for institutional arrangements may vary by sector needs and capacity (para. 154).	SERD	Next RCSP
(iv) <b>Expand cofinancing.</b> Identify other development partners, private sector, and the GMS member countries that can bridge the financing gap that exists in the GMS program, especially for integrated multisector projects (para. 155).	SERD	Next RCSP
(v) <b>Make coordination more effective.</b> Strengthen coordination between GMS sector working groups, between national and subregional projects within a country, between sector departments in ADB, and between the GMS program and the resident missions (para. 156).	SERD	2009
<b>2. Improve program and project-level performance</b> (i) <b>Emphasize regional benefits.</b> Focus on the subregional nature of projects, emphasizing the additionality of regional benefits in the design and implementation of subregional projects (para. 158).	SERD	2009
(ii) <b>Engage in greater policy dialogue.</b> ADB should raise awareness, provide policy advice, and support enforcement to reduce the negative impacts of RCI (para. 159).	SERD	2009
(iii) <b>Support the implementation of policy and procedural reforms.</b> Address key “software” constraints to derive greater regional benefits from “hardware” in place (para. 160).	SERD	2010
(iv) <b>Pay more attention to results monitoring and evaluation.</b> Establish baseline indicators, track progress, and compare costs and benefits of investments, focusing on a few indicators (para. 161).	SERD	2009

ADB = Asian Development Bank, DMC = developing member country, GMS = Greater Mekong Subregion, RCI = regional cooperation and integration, RCSP = regional cooperation strategy and program, SERD = Southeast Asia Department.

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## I. INTRODUCTION

### A. Background

1. The Greater Mekong Subregion (GMS) program covers six countries—Cambodia, Lao People’s Democratic Republic (Lao PDR), Myanmar, Thailand, Viet Nam, and Yunnan Province and Guangxi Zhuang Autonomous Region (GZAR) of the People’s Republic of China (PRC)<sup>1</sup> (Map). The possibilities for subregional economic cooperation among Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam, and PRC (Yunnan Province) were first discussed in the Ministerial Conference in October 1992 at the Asian Development Bank (ADB) headquarters. ADB’s function was to act as a catalyst, facilitator, and financier of projects, combined with providing secretariat support as mandated by the GMS ministers.<sup>2</sup> The initial 10 years of the GMS program were characterized more by sector-specific initiatives rather than a holistic vision. It was not until November 2001 that the countries adopted a 10-year GMS Strategic Framework (GMS-SF)<sup>3</sup> covering 2002–2012. Meanwhile, ADB developed the regional cooperation strategy and program (RCSP)<sup>4</sup> in 2004, specifically to support the GMS-SF in incorporating regional priorities into the operational pipeline and to complement country strategies and programming. The first RCSP states its overarching objective in the subregion as poverty reduction. This was followed by an ADB-wide regional cooperation and integration strategy (RCIS)<sup>5</sup> in 2006, which aims explicitly to move away from a focus on standalone projects and programs toward a more strategic approach.

2. From the outset, the GMS program was designed as a relatively flexible “activity-based” as opposed to a “rules-based” form of cooperation. This meant that member countries collaborated on specific projects and activities involving limited joint action and lending to a few key sectors, principally road and power infrastructure, and to a lesser extent tourism. This is in contrast to tighter rules-based groupings that aim for trade and investment harmonization (such as the Association of Southeast Asian Nations [ASEAN]/ASEAN Free Trade Area) or closer forms of political and economic integration (such as the European Union). Most ADB lending for the GMS (90%) has gone to road transport, with a modest amount (9%) to energy. Technical assistance (TA) operations are spread more widely across sectors and in recent years have gone increasingly to support environmental initiatives. Appendix 1 provides details of ADB funding across sectors and GMS member countries, and Appendix 2 gives the distribution of loans and TA to the GMS program by sector.

3. Conceptually, the GMS can be seen as a grouping to provide regional public goods, defined as goods that benefit at least two member countries (para. 12), but that would be undersupplied by countries acting alone, since individually they would be unable to take into account the costs of their actions on others or capture all of the benefits. The theoretical basis for such goods is discussed further in Appendix 3.<sup>6</sup> Three cases are of particular relevance to the GMS: (i) where the activities of one country can substitute for those of another, so there is a free-rider problem where one country could take advantage of the efforts of another (research into human or animal disease control across the region may be an example); (ii) where there needs to be collaboration, but one country is too poor to meet the full cost of supply (cross-border roads may be an example here); and (iii) where overall supply level or quality is determined by the efforts of the weakest member country (environmental

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<sup>1</sup> GZAR was added as a GMS member during the 13th GMS Ministerial Conference in 2004.

<sup>2</sup> ADB. 1995. Ministerial Inception Meeting of the Subregional Transport Forum and the Subregional Electric Power Forum. Available: <http://www.adb.org/Documents/Events/Mekong/Proceedings/stf-1.pdf>

<sup>3</sup> ADB. 2002. *Building on Success: A Strategic Framework for the Next Ten Years of the Greater Mekong Subregion Economic Cooperation Program*. Manila.

<sup>4</sup> ADB. 2004. *The GMS Beyond Borders: Regional Cooperation Strategy and Program. 2004–2008*. Manila.

<sup>5</sup> ADB. 2006. *Regional Cooperation and Integration Strategy*. Manila.

<sup>6</sup> Regional public goods have been categorized according to the degree with which they match the classic properties of public goods—nonrivalry in consumption and non-excludability. The categories are pure public goods, impure (mixed) public goods, club goods, and joint products.

protection in relation to biodiversity, for example). In each case, there is a justification for intervention, either financial or organizational, to bring member countries together to maximize their joint benefits.

4. There have been two previous evaluations (one a self-evaluation and another an independent evaluation) of the GMS program, and some of the concerns raised in these evaluations are also emphasized here. In 1999, an evaluation study of the GMS program<sup>7</sup> was undertaken by the Operations Evaluation Department (OED) in order to draw lessons from the first 7 years of its implementation. The study found that overall progress had been satisfactory, but it raised concerns about the lack of focus of the GMS program and limitations on the availability of ADB resources for regional cooperation. In relation to road transport, the evaluation stressed that the success of cross-border roads was critically dependent on progress in trade facilitation that would ease nontariff barriers to the flow of goods. With regard to energy, the study found that the GMS program had played a critical catalytic role through support of the subregional working group on energy, provision of support for the Subregional Electric Power Forum (an advisory body with both government and private sector members), and direct funding of TA (Appendix 4).

5. In 2007, a midterm review<sup>8</sup> of the GMS-SF was undertaken by the Southeast Asia Department in order to draw lessons from the first 5 years of its implementation. The review concluded that the GMS program had "... made very good progress in the 'hardware' aspects of cooperation involving the first strategic thrust (para. 11) of the GMS-SF, but less so in the 'software' components of cooperation involving the four other thrusts of the GMS-SF, especially in the measures necessary to enhance competitiveness and in activities addressing social and environmental issues in the GMS..." Greater attention was also needed to promote greater local ownership by both governments and local communities, to attract further private sector participation, and to broaden the scope of the cross-border road projects to convert them into genuine economic corridors so that they could become catalysts for further economic activity (Appendix 4). Some of these concerns are repeated in this evaluation as well (paras. 37–44, 46, 51–53, 63, 74, and 87).

6. This report covers the ADB-cofinanced GMS operations during 1992–2007. It does not evaluate the operations financed by other aid agencies or GMS member countries, nor does it cover any GMS activities in Myanmar where ADB does not have operational activity. It adapts the evaluation framework developed for country assistance program evaluations involving a combination of "top-down" (strategic and institutional performance) and "bottom-up" (project and operational performance) perspectives to a regional context. The top-down approach is based on analysis by the evaluation team derived from reviews of documents and discussions with GMS stakeholders. It examines the GMS performance based on the RCSP in relation to the criteria of (i) strategic assessment (how the overall program and its components fit into country and ADB strategies); (ii) institutional assessment (degree of country ownership, suitability of institutional arrangements, extent of resource mobilization, and capacity building); (iii) value addition (how far the program has added value for participating countries and those outside the subregion); and (iv) ADB performance (how well ADB has performed in its multiple roles as financier, catalyst, honest broker, technical adviser, and secretariat). The bottom-up assessment focuses on ADB's GMS operations—loans, special grants, and regional technical assistance (RETA). It draws particularly on primary data collected for this study on completed and ongoing transport and energy projects, as well as on secondary data sources. It also includes results of project recalculations conducted for this study. Five criteria are applied: (i) relevance to the GMS members, ADB activities, and the subregion in general; (ii) effectiveness in achieving project objectives; (iii) efficiency in managing costs and benefits involved in the program; (iv) sustainability of its longer-term continuation; and (v) impact of effects not captured monetarily in a

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<sup>7</sup> ADB. 1999. *Impact Evaluation Study of the Asian Development Bank's Program of Subregional Economic Cooperation in the Greater Mekong Subregion*. Manila.

<sup>8</sup> ADB. 2007. *Midterm Review of the Greater Mekong Subregion Strategic Framework (2002–2012)*. Manila.

cost-benefit framework. Given the GMS program's early stage of maturity, the focus here is principally on efficiency and effectiveness. The counterfactual is reviewed in the assessment of ADB's past value added.

7. The report is built on a series of working papers<sup>9</sup> that look individually at transport and trade, energy, tourism, environment, agriculture, and human resource development (HRD). The remainder of this chapter describes ADB's regional cooperation strategy, GMS program structure and organization, coordination within ADB, and economic and social background of the GMS program. Chapter II is devoted to the assessment of the strategic and institutional (top-down) performance and chapter III for (bottom-up) evaluation of the GMS projects and TA. The report ends with the chapter on conclusions, issues, lessons, and recommendations.

## B. ADB Regional Cooperation Strategy

8. ADB support for regional cooperation stems from its Charter, which mandates it to promote economic growth and cooperation in the Asia and Pacific region by supporting the development of developing member countries (DMCs), "giving priority to those regional, subregional, as well as national projects and programs which will contribute most effectively to the harmonious growth of the region as a whole."<sup>10</sup> In 1992, ADB adopted its first Medium-Term Strategic Framework,<sup>11</sup> which emphasized ADB's role in promoting cooperation among DMCs.

9. Subsequent strategic documents for ADB reiterated the importance of regional cooperation. In 2001, the Long-Term Strategic Framework (LTSF), 2001–2015<sup>12</sup> formally recognized regional cooperation as a core component of the overarching agenda of poverty reduction by classifying it as a crosscutting theme in ADB's work. Similarly, the current *Strategy 2020* identifies regional integration as one of its three strategic agendas. In addition, regional cooperation is one of the five core areas of operations. *Strategy 2020* states that "ADB will scale up its support for regional cooperation and integration (RCI) (up to 30% by 2020), increasing both the volume of its RCI operations and the share of RCI in total operations."<sup>13</sup> The ADB results framework adopted an interim target of 15% by 2012. Of ADB lending operations approved from 2004 to 2006, only 7% correspond to RCI, thus indicating a large gap to bridge.

10. In addition, separate strategy documents have been issued to guide regional cooperation activity. In 1994, ADB adopted a Regional Cooperation Policy<sup>14</sup> that advocated a phased approach<sup>15</sup> to facilitate regional cooperation, emphasizing ADB's role as a provider of information, an honest broker in facilitating partnership, and a mobilizer of funding. This policy on regional cooperation mirrored ADB's stance in the GMS at the time.<sup>16</sup> The most recent RCIS, issued in 2006 (footnote 5), is based on four pillars or key areas of activity: (i) cooperation on cross-border infrastructure and related

<sup>9</sup> The detailed working papers are available upon request.

<sup>10</sup> ADB. 1966. *Agreement Establishing the Asian Development Bank*. Manila.

<sup>11</sup> ADB. 1992. *The Bank's Medium-Term Strategic Framework (1992–1995)*. Manila.

<sup>12</sup> ADB. 2001. *Moving the Poverty Reduction Agenda Forward in Asia and the Pacific: The Long-Term Strategic Framework of the Asian Development Bank (2001–2015)*. Manila.

<sup>13</sup> ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008–2020*. Manila. It indicates that "ADB will undertake four roles in the region by (i) Increasing financial resources for RCI projects, programs, and related technical assistance, and/or helping DMCs mobilize funding and TA; (ii) Expanding the creation and dissemination of knowledge and their information on RCI to DMCs; (iii) Furthering its support to DMCs and regional bodies to build their institutional capacity to manage RCI; and (iv) Strengthening ADB's role as a catalyst and coordinator of RCI for DMCs."

<sup>14</sup> ADB. 1994. *Bank Support for Regional Cooperation*. Manila.

<sup>15</sup> First, build country appreciation of regional cooperation; then, help identify potential activities through grants; and, finally, help finance or mobilize financing for the projects.

<sup>16</sup> Working paper 6 of the special evaluation study on the LTSF on regional cooperation.



software, (ii) trade and investment cooperation,<sup>17</sup> (iii) monetary and financial cooperation, and (iv) cooperation in regional public goods. Apart from pillar (iii), these are wholly consistent with the thrust of the GMS strategy.

11. The countries adopted the 10-year GMS-SF,<sup>18</sup> covering 2002–2012, during the 10th Ministerial Conference. It was subsequently endorsed by heads of state during the First GMS Summit in 2002. It envisions an integrated and prosperous GMS to be achieved through an enabling policy environment and infrastructure linkages, as well as the development of human resources and skills. To ensure that GMS development is equitable and sustainable, environment and social interests will be observed in the GMS program. In 2004, ADB finalized the GMS RCSP, representing its own plan for action in the GMS in support of the GMS-SF (as distinguished from the broader GMS-SF, which corresponds to all GMS stakeholders, not just ADB). The RCSP identifies poverty reduction as the objective for GMS, which is to be achieved through a vision of connectivity, competitiveness, and greater sense of community (known as three Cs). Related to the overall ADB RCIS, ADB's GMS RCSP has adopted four thrust areas: (i) strengthening connectivity and facilitating cross-border movement and tourism; (ii) integrating national markets to promote economic efficiency and private sector development; (iii) addressing health and other social, economic, and capacity-building issues associated with subregional linkages; and (iv) managing the environment and shared natural resources.<sup>19</sup>

12. Since 2002, there has been a move toward separately identifying resources for RCI initiatives such as the GMS program to reduce constraints imposed on national programs. However, within the large number of strategy and policy documents on regional cooperation, there exists a range of definitions of what constitutes a regional project (Table 1).<sup>20</sup> The most common usage is where two or more countries are involved or where, even in the absence of explicit collaboration between the countries, a national project has important spillover effects for other countries (such as environment projects). A pragmatic definition currently applied by the GMS Secretariat is that a regional project is one that is included in GMS sector strategies. In some instances, the classification of a project as national or regional may be arbitrary. For example, national road projects near but not crossing a border may have a regional impact, such as the Hanoi to Lang Son road<sup>21</sup> in Viet Nam, which has been judged to have definite subregional benefits. It was initially classified as a national project but was added to the list of GMS subregional projects in 2008, 5 years after completion. Similarly, most GMS road projects in Yunnan and GZAR are in the interior of the provinces and depend on the government to complete links with international border crossings. They are, nonetheless, classified as GMS activities. This is an issue that needs to be resolved, especially in the light of Asian Development Fund (ADF) resources being earmarked for regional activities (para. 14). One aspect that may be considered in the definition of a regional project involves "additionality"—achievement of

<sup>17</sup> According to the RCIS, the pillar on trade and investment cooperation will receive less weight compared with the other pillars, although prioritization will still need to be aligned with the Medium-Term Strategy II and the specific conditions in each subregion.

<sup>18</sup> The main differences from the earlier program are the following: (i) a more multisectoral approach to regional cooperation will now be pursued, such that the initiatives focus on developing the same geographic space as economic corridors; (ii) GMS priority projects will be formally integrated into national development plans; (iii) subregional agriculture development will be added in the program to address price control and the role of infrastructure in reducing the cost of selling agricultural products; (iv) the private sector will be engaged more actively as financier and development partner, recognizing that it is the main engine of growth for the GMS; and (v) a comprehensive development matrix will be developed to plan and program GMS subregional projects, built around 11 flagship programs, and with commitments from governments to assure priority financing of the national components of these programs.

<sup>19</sup> These thrust areas stemmed from the five thrust areas identified in the GMS-SF.

<sup>20</sup> The World Bank's definition of a regional project is "an undertaking that is intended to accomplish one or more development objectives in three or more countries in the same or contiguous regions, and that involves cooperation or integration among the participating countries."

<sup>21</sup> ADB. 2008. *Greater Mekong Subregion Ha Noi–Lang Son and Ha Long–Mong Cai Expressway Projects*. Manila (TA 7154-VIE, for \$1.5 million, approved on 23 October).

an overall regional benefit that is greater than the sum of national benefits. The additionality of regional benefits needs to be clear from the concept stage of a project.

**Table 1: Definitions of a Regional Cooperation Project from ADB Documents**

Date	Source	Definition of a Regional Cooperation Project/GMS Project
March 1994	Regional Cooperation Policy	Activities involving two or more DMCs
December 1999	Impact Evaluation Study of the ADB's Program of Subregional Economic Cooperation in the GMS	Proposed guiding principles: (i) where there is a clear need and benefits from subregional consultations during design and implementation, (ii) where there are economies of scale, (iii) where transaction costs are reduced, (iv) where development is speeded up through sharing of knowledge, and (v) where it increases opportunities that partners on their own are not able to capture.
November 2002	Building on Success: A Strategic Framework for the Next Ten Years of the GMS Economic Cooperation Program	Projects involving two or more member countries
October 2003	Operations Manual, Section B1/BP	Projects with potential regional implications, a strong economic rationale, or contribution to the reduction of poverty in the region; and national projects with regional implications or projects that call for complementary investments by neighboring DMCs.
March 2004	The GMS Beyond Borders: RCSP, 2004–2008	GMS or regional projects complement and amplify national projects by overcoming geographical barriers, integrating regional markets, and promoting new economic opportunities.
July 2006	Regional Cooperation and Integration Strategy	Projects that support RCI pillars: (i) cross-border infrastructure and related software; (ii) regional and subregional trade policy dialogue; (iii) regional economic policy dialogue, capacity building and institutional strengthening, research and information dissemination, and partnership building on monetary and financial integration; and (iv) regional public goods.
January 2008	GMS Secretariat working definition	Projects discussed by GMS working groups and/or those included in GMS sector strategies
August 2008	Operations Manual, Section B1/OP	Projects that (i) involve two or more (not necessarily adjacent) countries responding to cross-border issues; (ii) may be national projects that have significant regional dimensions (part of a regional system or agreements for trade, harmonization, or communication); (iii) facilitate regional policy dialogue and agreements on trade, investment, and monetary and financial cooperation; (iv) support research and knowledge sharing regarding the four RCI pillars; and (v) strengthen institutional capacity of regional groupings and partnership building with regional and international institutions and public and private sectors.

ADB = Asian Development Bank, BP = Bank policy, DMC = developing member country, GMS = Greater Mekong Subregion, OP = operational procedure, RCI = regional cooperation and integration, RCSP = regional cooperation strategy and program. Source: Operations Evaluation Mission.

13. The balance between national and GMS projects in the subregion varies markedly between sectors and countries. From 1992 to 2007, 16% of lending to transport was for national projects and 84% for projects classified as GMS projects. This low national share is partly because all transport loans to Yunnan and GZAR were classified as GMS loans. In the Lao PDR, a majority of transport loans are for national projects; and in Cambodia the proportion is 32%. In energy, the share of national projects in total lending is much higher at 90%, although it is 60% in Cambodia and 42% in the Lao PDR. In energy, all lending to the GMS provinces of PRC, Thailand, and Viet Nam is classified as national (Tables 2 and 3).

**Table 2: GMS and Non-GMS Transport Projects (Loans and TA), 1992–2007 (\$ million)**

Item	Non-GMS Assistance			GMS Assistance				Total	Total
	Loan	PPTA	ADTA	Loan	PPTA	ADTA	Core TA	Loan	TA
Cambodia	68.00	2.08	2.29	154.00	1.26	0.25		222.00	5.88
Lao PDR	129.70	2.83	5.77	110.00	2.00	0.84		239.70	11.44
Yunnan and GZAR				1,532.00	5.13			1,532.00	5.13
Viet Nam	414.50	8.00	5.00	1,512.00	4.30			1,926.50	17.30
RETA					9.27	6.13	4.95		20.35
<b>Total</b>	<b>612.20</b>	<b>12.91</b>	<b>13.06</b>	<b>3,308.00</b>	<b>21.96</b>	<b>7.22</b>	<b>4.95</b>	<b>3,920.20</b>	<b>60.10</b>

ADTA = advisory technical assistance, GMS = Greater Mekong Subregion, GZAR = Guangxi Zhuang Autonomous Region, Lao PDR = Lao People's Democratic Republic, PPTA = project preparatory technical assistance, RETA = regional technical assistance, TA = technical assistance.

Note: "Loan" refers to Asian Development Bank loans only, but TA may have cofinancing elements.

Sources: GMS Secretariat and ADB information systems.

**Table 3: GMS and Non-GMS Energy Projects (Loans and TA), 1992–2007 (\$ million)**

Item	Non-GMS			GMS				Total	Total	Grand
	Loan	PPTA	ADTA	Loan	PPTA	ADTA	Core TA	Loan	TA	Total
Cambodia	66.80	0.60	2.64	44.30	0.91			111.10	4.15	115.25
PRC (Yunnan)	207.00	0.55	0.79					207.00	1.34	208.34
Lao PDR	95.50	4.14	4.33	132.00	4.41	0.14		227.50	13.02	240.52
Thailand	602.45		0.95					602.45	0.95	603.40
Viet Nam	559.98	8.10	10.91		1.25			559.98	20.26	580.23
RETA					3.46	9.82	0.08		13.36	13.36
<b>Total</b>	<b>1,531.73</b>	<b>13.39</b>	<b>19.62</b>	<b>176.30</b>	<b>10.03</b>	<b>9.96</b>	<b>0.08</b>	<b>1,708.03</b>	<b>53.08</b>	<b>1,761.10</b>

ADTA = advisory technical assistance, GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic, PPTA = project preparatory technical assistance, PRC = People's Republic of China, RETA = regional technical assistance, TA = technical assistance.

Note: "Loan" refers to Asian Development Bank (ADB) loans only. TA amount may include funding from TA Special Fund, Japan Special Fund, other sources, and government contribution.

Sources: GMS Secretariat and ADB information systems.

14. Although perhaps arbitrary at times, the choice of classification can have funding implications. A relatively small proportion of ADF is earmarked for regional cooperation projects (5% in ADF IX and 10% in ADF X).<sup>22</sup> Projects eligible for these funds must create benefits that accrue to more than one country and ensure country ownership. Under ADF X, every dollar drawn from the pool should be matched by at least 50 cents from the country's total ADF allocation, subject to a 20% ceiling. These arrangements do not concern PRC and Thailand, because they do not have access to ADF, but are of great relevance to Cambodia, Lao PDR, Viet Nam, and potentially Myanmar.<sup>23</sup> For instance, from 1994 to 2008, some 47% of ADF resources were allocated to GMS countries (for both national and regional projects).<sup>24</sup>

15. In recent years, demand has grown; and for 2004–2008, the GMS RCSP indicated a \$5 billion gap in project financing.

### C. GMS Program Structure and Organization

16. The GMS program has a key role in the RCIS as the first and longest standing example of regional cooperation. Since its inception in 1992, it has evolved gradually from an organization focused on a more limited number of sectors and driven principally by ADB into a much wider ranging

<sup>22</sup> In the African Development Bank, 15% of African Development Fund resources are currently allocated to regional cooperation projects.

<sup>23</sup> No ADB loans had been approved for Myanmar under the GMS, with the last ADB operation in Myanmar being approved in 1987. While it participates in several RETA operations on the GMS, the absence of documentary information inhibits a clear analysis of GMS experience in Myanmar.

<sup>24</sup> ADB. 2007. ADF and Regional Cooperation. Paper presented at the ADF X Donors' Meeting on 26–27 November, Vientiane.

scheme of cooperation in which member countries are increasingly becoming active. Tangible progress in terms of significant regional economic impact has been slow, but this is probably to be expected given international experience with other regional cooperation schemes. The GMS, in fact, conforms to several of the principles for “good practice” in regional cooperation highlighted in Appendix 4. It focused initially on a limited range of activities and proceeded slowly with increasing country ownership. Although it is not a participating member country, ADB is able to provide support and direction through the resources it offers. The “two plus” principle also allowed a minimum of two countries to collaborate without involving all members. Finally, from an early stage, the need to build growth poles around transport links was noted. However, other useful lessons can also be adapted to the GMS, which need to be carefully considered in fine-tuning the RCSP (Box 1).

### Box 1: Selected Lessons from International Experience on Regional Cooperation

1. **Returns to Infrastructure Investment are Probably Highest during the Early Stages of Development**, when infrastructure is scarce and basic networks have not been completed. Returns on infrastructure investment tend to fall, sometimes sharply, as economies reach maturity.<sup>a</sup>
2. **Ambitious Designs and Timeframes.** Most regional programs do not carefully identify institutional and policy-making capacity gaps, and even fewer design measures to address identified gaps at both the national and regional levels. As a result, program objectives are too ambitious for the implementing capacities of the relevant national and regional institutions.<sup>b</sup>
3. **Most Multilateral Institutions Have Weak Instruments and Incentives for Their Staff to Design Regional Approaches, Programs, and Projects.** External resources tend to be more involved with countries on an individual basis than with regions. In some interventions, while the diagnostic study or reference framework displays a regional approach, the project components and activities target national issues.<sup>c</sup> While programs set out to focus on cross-border problems and promote regional advocacy, these often do not measure up to the regionality criteria and might as well have been implemented at the national level.<sup>d</sup>
4. **Balance between Ownership and Effectiveness.** Regional programs usually “respond” to the needs of diverse countries and regional organizations, which makes the leaders of the region appreciate the funding agency’s support and presence, but this may create a trade-off in terms of focus and effectiveness. There is a tendency to undertake activities across many countries, regional organizations, sectors, and topics, but, as useful as much of the work would be, these are more reactive than strategic. Therefore, there is a need to focus the program with a strategic perspective.<sup>e</sup>
5. **Graduated Reduction in Support or Exit Strategy?** The European Union is experimenting with a graduated reduction in support over 5–7 years to the Caribbean Community Secretariat for project implementation. The issue of self-reliance is related to the presence of development partners in the region and their level of effort (footnote e).

Note: Additional lessons are shown in Appendix 4, including those from the 1999 Operations Evaluation Department assessment and the 2007 Southeast Asia Department midterm review.

<sup>a</sup> Roland-Holst, David. 2006. *Infrastructure as Catalyst for Regional Integration, Growth, and Economic Convergence: Scenario Analysis for Asia*. ADB Economics and Research Department Working Paper Series No. 91. Manila.

<sup>b</sup> World Bank. 2007. *The Development Potential of Regional Programs: An Evaluation of World Bank Support of Multicountry Operations*. Independent Evaluation Group. Washington, DC.

<sup>c</sup> Inter-American Development Bank. 2002. *Implicit IDB Strategy for Regional Integration: Its Evaluation*. Office of Evaluation and Oversight. Washington, DC.

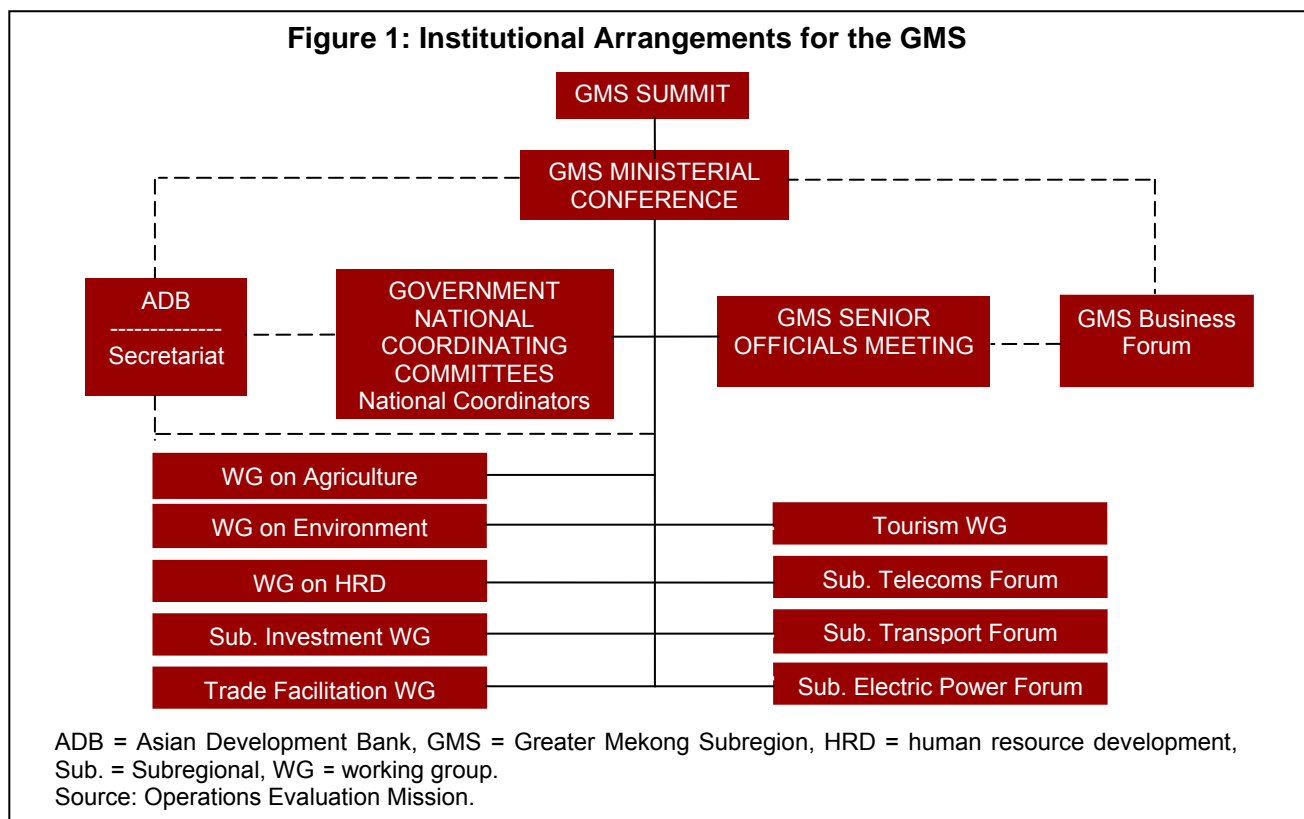
<sup>d</sup> United Nations Development Programme (UNDP). 2007. *Evaluation of the UNDP’s Second Regional Cooperation Framework for Asia and the Pacific: 2002–2006*. Evaluation Office. New York.

<sup>e</sup> Canadian International Development Agency. 2004. *Caribbean Regional Program Evaluation: Synthesis Report*. Performance Review Branch. Quebec.

17. For the first 10 years of its existence, the GMS program did not have an explicit and integrated development strategy. The initial years of cooperation focused on building trust and confidence through specific programs and project activities without a comprehensive framework. Nine sectors were identified in the program: agriculture, energy, environment, HRD, investment, telecommunications, tourism, trade, and transport. Eight of these sectors have been in existence over most of the life of the program, and agriculture was added later. However, most activity in terms of physical investment has been in road transport and energy, with environment and capacity development receiving most TA support. Hence, this report focuses principally on these key areas.

18. The GMS-SF, covering 2002–2012, was the first attempt by the DMCs to formulate an overall subregional planning framework. It identifies 11 flagship programs, including the development of economic road corridors and of regional power interconnection and trading. It further identifies a number of key areas that were subsequently incorporated in the 2004 RCSP for the GMS (para. 11).

19. The institutional base for the GMS stems from a technical and logistic secretariat at ADB and a number of working groups, with proposals from these going for decisions at the political level. Most of the current sector forums and working groups started to convene in 1995–1996<sup>25</sup> and were mandated to facilitate and monitor the progress of specific initiatives approved for implementation at the Ministerial Conference level. Issues that go beyond the operational and area-specific mandate of the forums and working groups were referred to the Ministerial Conference (e.g., introduction of new projects, decisions requiring policy-related considerations, and issues with intersectoral implications). Figure 1 sets out the key features of the institutional arrangements of the GMS as of November 2008. Key decisions have been taken at ministerial meetings and GMS summits, indicating support for and ownership of the GMS program at the highest levels of government. Member countries have a national coordinator serving as the point of contact of the country for all GMS matters, and are increasingly active in the various working groups, forums, and subcommittees. The ADB-based Central Secretariat works with the national coordinators in providing technical, administrative, and coordinating support to the Ministerial Conference and the sector forums and working groups (footnote 2).



20. There have been three GMS summits, the first in 2002 to set the broad thrust of GMS policy and confirm investment priorities. The GMS Plan of Action, setting priority projects and a timeframe

<sup>25</sup> The Tourism Working Group (TWG), Subregional Transport Forum, and Energy Sector Forum were convened in April 1995; the Subregional Telecommunications Forum in November 1995; the Working Group on Environment in October 1995; and the Investment Working Group in December 1995. The Working Group on HRD was set up in December 1996. The Trade Facilitation Working Group and the Working Group on Agriculture were established in November 1999 and July 2002, respectively.

for their implementation, was introduced after the 2004 13th GMS Ministerial Conference and updated after the 2008 meeting. Ministerial meetings are intended to provide oversight of GMS program content and implementation progress. Although originally intended to be annual meetings “since the establishment of the GMS Summit, and with five Mekong Development Forums held in 2004–2006, in recent years the meeting has been held on a less regular basis.”<sup>26</sup>

21. Meetings of senior officials are held two or three times annually and comprise the GMS national coordinators and line ministry representatives. They review sectoral program implementation and identify issues that may be addressed by ministers and those for discussion at GMS ministerial conferences. In addition to meetings where all GMS activities have been the focus, some meetings have focused on a specific sector.

22. There are three sector forums and six sector working groups and a general (private sector-led) business forum (Figure 1). The difference between forums and working groups is largely one of scale: Forums were established for major sectors that might require subworking groups. Both are responsible for coordinating the development of sector programs and activities, including providing guidance for the implementation of projects. Membership consists of senior GMS country line agency officials. Although not decision-making bodies, they offer the opportunity for consensus views to be passed on to respective governments. ADB supports the forums and working groups by cochairing meetings and providing secretariat and financial support when needed. Details of individual working group activities are contained in the working papers undertaken as part of this study.

23. There has been increasing ownership within the region of certain forums and working groups. Since 2006, secretariat support for the Working Group on Environment (WGE) has been provided by the Environment Operations Center (EOC) based in Bangkok.<sup>27</sup> The EOC also acts as a knowledge center for the sector and hires contractual staff independently of ADB. In a similar way, the Mekong Tourism Coordination Office (MTCO), also based in Bangkok, provides secretariat support for the Tourism Working Group (TWG) and serves as a key marketing arm for promoting the GMS as a single tourist destination. The Electric Power Forum, set up initially in 1995, has evolved into the Energy Sector Forum with two subgroups—an expert advisory group and the Regional Power Trade Coordinating Committee. The latter is developing the framework for regional trade in power. For transport, the Subregional Transport Forum oversees projects; and for trade, the Subregional Trade Facilitation Working Group (STFWG) focuses mainly on removing barriers caused by customs procedures. The National Transport Facilitation Committee and the Cross-Border Transport Agreement (CBTA) Joint Committee provide the institutional support for the CBTA negotiations, finalization, and implementation, among others.

#### **D. Coordination within ADB**

24. Currently, a number of departments have responsibility for regional cooperation in ADB. Prior to the implementation of the RCIS in 2006, the division of responsibility was guided by ADB’s Operations Manual,<sup>28</sup> which assigns the operational responsibility for subregional and interregional regional cooperation to the regional departments. The then Regional Economic Monitoring Unit<sup>29</sup> was to monitor regional and subregional performance and policy issues in DMCs and support monetary and financial cooperation efforts by providing TA and advisory services. The Regional and Sustainable Development Department (RSDD) was assigned coordination of activities on regional

<sup>26</sup> ADB. 2007. *The Greater Mekong Subregion Program: An Overview and Update on Key Structures, Programs, and Developments*. Manila.

<sup>27</sup> The WGE has worked with ADB to produce a Core Environment Program that aims to integrate environmental concerns in all GMS initiatives.

<sup>28</sup> ADB. 2003. *Operations Manual: Regional Cooperation*. OM Section B1/OP. 29 October. Manila.

<sup>29</sup> The Regional Economic and Monitoring Unit was expanded and renamed the Office of Regional Economic Integration in 2005.

cooperation, but a 2005 independent assessment of RSDD<sup>30</sup> revealed that its performance had been mixed. It was not able to develop an ADB-wide strategy for regional cooperation, although it initiated the process in 2004. Concerns were also raised over its ability to manage the large RETA portfolio and deliver its regional cooperation mandate with its modest resources.

25. With the adoption of the RCIS in 2006, responsibility for regional cooperation was divided according to the strategy's four pillars. The five regional departments are tasked with carrying out activities under pillar 1, the Office of Regional Economic Integration (OREI) for pillars 2 and 3, and RSDD for pillar 4. The RCIS also gave OREI the responsibility for facilitating and coordinating ADB's RCI support by providing "horizontal links" across concerned departments, but it has no explicit authority to oversee the regional cooperation activities of the other departments, and its primary role remains in the promotion of ADB's RCI activities under pillars 2 and 3. The appointment of the Managing Director General as a Special Advisor to the ADB President on RCI could help resolve major RCI coordination issues, but it is not clear whether operational coordination issues are elevated to his level.

26. Responsibility for ADB operations in the GMS lies with the Southeast Asia Department (SERD), which also takes on the responsibility for the GMS Secretariat. Routine work of the Secretariat is currently done by a number of consultants from the Philippines and is led by a senior regional cooperation specialist (under the direction of the SERD management). SERD assists in the overall coordination of ADB's support to the GMS program and provides secretariat support to the Summit, Ministerial Conference, and the Senior Officials Meeting. It is also the de facto secretariat for some working groups and forums.<sup>31</sup> It provides administrative, logistical, and technical support to GMS meetings and serves as a focal point for information on the GMS program.

27. In addition to processing and administering GMS loans and TA under their respective sectors, the four sector divisions under SERD (agriculture, environment, and natural resources; governance, finance, and trade; infrastructure; and social sectors) are responsible for assisting the GMS countries in setting and overseeing the work program of the sector working groups and forums. The four sector directors sit as cochairs in their respective working groups and forums. However, GMS investment projects in the Yunnan Province and GZAR of the PRC is managed by the East Asia Department, and special coordination efforts may be needed (for example, a dedicated professional in the PRC Resident Mission for regional cooperation)<sup>32</sup> to coordinate with the GMS operations unit. Taking on the GMS Secretariat work naturally adds a substantial workload and responsibility to the SERD staff.

28. The total cost of institutional support incurred by ADB, including ADB headquarters support, has been some \$17 million since 1992, or an average of \$1 million per year. This figure reflects the costs incurred under RETA operations over the period but does not take into account expenditures incurred by regional departments in pursuing individual project opportunities or the direct staff costs of the GMS program.

29. ADB also plays a coordinating role on behalf of the GMS countries with respect to some regional cooperation initiatives of other development partners in the Mekong region (paras. 65–71) such as the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the World Conservation Union.

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<sup>30</sup> ADB. 2005. *Regional and Sustainable Development Department: Towards Greater Relevance and Effectiveness*. Manila.

<sup>31</sup> The TWG is being supported by the MTCO, and the WGE is being supported by the EOC. The secretariat for the Working Group on Agriculture is lodged under SERD's Agriculture, Environment, and Natural Resources Division, but the GMS Unit provides additional support to the secretariat.

<sup>32</sup> There are professional staff assigned for regional cooperation in the Thailand Resident Mission (a senior economist and an economist), both handling regional cooperation.

## E. Economic and Social Background

30. The evolution of the GMS program has coincided with strong growth in income and trade of member countries, although there remains considerable disparity between the economically stronger members (Thailand and PRC) and the others. Table 4 gives data on growth of gross domestic product (GDP), growth of exports and imports, and the share of the GMS in total trade for GMS members from 1992 to 2007. Trade within the GMS is particularly important for the landlocked Lao PDR and for GZAR and Yunnan, although as a share of total trade it is small for the larger economies of Thailand and Viet Nam and for Cambodia since the upsurge in garment exports to the United States after 2005. Taken as a whole, the subregion trades more with itself now than it did in the mid-1990s, and two econometric studies—one for the 1990s and the other for the more recent period—found that most members tend to trade more with each other than would be expected, given their income levels and the distance between them.<sup>33</sup> How far this can be put down to GMS membership per se is difficult to establish. The improvement in relations at a political level as reflected in the GMS summits must have helped, and there has been strong growth in the power trade between Lao PDR and Thailand from hydropower schemes that have been classified as GMS projects (on the grounds that both countries benefit). However, the anticipated key drivers of subregional trade—the road corridor projects across Thailand, Lao PDR, and Viet Nam to PRC—are not yet fully operational, with most sections opening only in the last couple of years. Further, the trade facilitation measures under the CBTA have been only partly introduced (initial implementation started at the Lao Bao–Dansavanh, Mukdahan–Kaysone Phomvihane, and Hekou–Lao Cai border-crossing points). As such, the total exports by GMS countries in 2006 with fellow GMS countries, taken as a percentage of the sum of GMS countries' total exports (6.5%), is still low compared with the 52%, 59%, and 52% intraregional trade shares, respectively, of Asian (as a whole), European Union, and North American countries, respectively, in 2006.<sup>34</sup>

**Table 4: Economic and Trade Growth<sup>a</sup> in the GMS: 1992–2007**

Countries	GDP Growth (Ave/yr)	GMS–World		GMS–Asia		GMS–GMS		Intra-GMS Exports to <sup>b</sup> Total Exports (2006)
		Export Growth (Ave)	Import Growth (Ave)	Export <sup>b</sup> Growth (Ave)	Import <sup>b</sup> Growth (Ave)	Export <sup>b</sup> Growth (Ave)	Import <sup>b</sup> Growth (Ave)	
Cambodia	8.9	20.3	20.2	4.6	22.9	2.9	30.5	2.5
Lao PDR	6.5	17.6	16.0	21.8	17.7	18.8	18.2	51.7
Myanmar		13.6	10.5	17.4	11.3	38.1	22.9	50.0
Thailand	4.1	11.7	9.5	15.4	12.8	22.5	24.3	4.7
Viet Nam	7.6	19.9	22.8	14.9	24.6	16.4	26.5	3.1
PRC–Yunnan <sup>c</sup>	10.7	16.3	23.2	20.4	20.5	28.7	32.6	30.8
PRC–GZAR <sup>c</sup>		9.7	19.2					
<b>Total GMS</b>	<b>5.5</b>	<b>12.7</b>	<b>11.7</b>	<b>15.8</b>	<b>16.2</b>	<b>26.7</b>	<b>26.9</b>	<b>6.5</b>

Ave = average, GDP = gross domestic product, GMS = Greater Mekong Subregion, GZAR = Guangxi Zhuang Autonomous Region, Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China.

<sup>a</sup> Refers to the least-squares growth rate of country exports to the world, Asia, and GMS.

<sup>b</sup> Excludes GZAR.

<sup>c</sup> Intra-Asia and intra-GMS trade data from 2000 to 2006.

Source: International Monetary Fund Direction of Trade Statistics.

31. The data collected on road projects (Appendix 5) shows cross-border traffic much slower to build up than expected, bringing down expected economic returns from the road projects. However, power trade has commenced with at least one of the power export projects showing strong returns as anticipated. Economic growth has taken place combined with specific project impacts that have been

<sup>33</sup> Poncet, S. 2006. The Economic Integration of Yunnan with the Greater Mekong Subregion. *Asian Economic Journal*. 20, 3; Weiss, J., Z. Zhang, and X. Zhang. 2008. GMS: Some Trade Estimates. Paper presented at Shanghai Forum, Fudan University, Shanghai, May.

<sup>34</sup> Gruenwald, Paul, and Masahiro Hori. 2007. *Intra-Regional Trade Key to Asia's Export Boom*. International Monetary Fund Survey Magazine. Available: <http://www.imf.org/external/pubs/ft/survey/so/2008/CAR02608A.htm>



associated with various forms of environmental degradation, and in recent GMS policy statements, the need for the sustainability of growth is highlighted.

32. PRC, Thailand, and Viet Nam are “early achievers” for halving extreme poverty under the Millennium Development Goals (MDGs) by 2015 (Table 5). While the Lao PDR is on track toward achieving its 2015 goal, Cambodia is progressing slowly; Myanmar did not have enough poverty data. Success with the health MDGs was more disparate: Lao PDR, Thailand, and Viet Nam were more aggressive in reducing child mortality rates, while Cambodia and Myanmar were able to reverse the spread of HIV/AIDS.<sup>35</sup> PRC and Viet Nam reported increases in forested areas, which were offset by declines in Cambodia, Lao PDR, Myanmar, and Thailand.

**Table 5: GMS Progress Toward the Millennium Development Goals: 1992–2007**

GMS Country		PRC <sup>a</sup>	Cambodia	Lao PDR	Myanmar	Thailand	Viet Nam
Share of population with income below \$1 PPP per day (%)	Starting year	33.0	32.5	53.0		10.2	50.8
	Latest year	10.8	18.5	28.8		2.0	8.4
	Trend	★	▲	▲		★	★
Share of population with income below the poverty line (%)	Starting year	9.4	39.0	45.0		18.0	50.9
	Latest year	2.0	34.7	32.7	26.6	9.8	19.5
	Trend	★	■	▲		▲	★
Under-five mortality rate (per 1,000) <sup>b</sup>	Starting year	45.0	116.0	163.0	130.0	31.0	53.0
	Latest year	24.0	82.0	75.0	104.0	8.0	17.0
	Trend	▲	■	★	■	★	★
HIV prevalence (% of population 15–49 years old)	Starting year	0.1	2.0	0.1	1.4	1.4	0.4
	Latest year	0.1	1.6	0.1	1.3	1.4	0.5
	Trend	▲	★	▲	★	▲	▼
Proportion of land area covered by forest (%) <sup>b</sup>	Starting year	16.8	73.3	75.0	59.6	31.2	28.8
	Latest year	21.2	59.2	69.9	49.0	28.4	39.7
	Trend	Improved	Worse	Worse	Worse	Worse	Improved
Proportion of terrestrial/marine areas protected (%) <sup>b</sup>	Starting year	11.6	0.1	0.9	1.2	13.0	0.9
	Latest year	14.9	21.6	16.0	4.6	19.0	3.6
	Trend	Improved	Improved	Improved	Improved	Improved	improved

GMS = Greater Mekong Subregion, HIV = human immunodeficiency virus, Lao PDR = Lao People’s Democratic Republic, PPP = purchasing power parity, PRC = People’s Republic of China.

Legend:

★ Early achievement                      ■ Slow  
▲ On track                                      ▼ Regressing

<sup>a</sup> Data for the entire PRC is reflected here, in the absence of Millennium Development Goals provincial data for Yunnan and Guangxi Zhuang Autonomous Region.

<sup>b</sup> Since these do not have explicit numerical targets for 2015, trend qualifiers are different from preceding Millennium Development Goals.

Sources: Asian Development Bank database and development indicators (available: <http://www.adb.org/Statistics/mdg.asp>).

## II. TOP-DOWN ASSESSMENT (STRATEGIC AND INSTITUTIONAL PERFORMANCE)

33. The focus here and in subsequent sections is on major GMS activities alone, especially those under the RCSP (footnote 4). Generalizations are made based on the findings of the sector working papers discussed in para. 7. A four-category rating system of “high,” “substantial,” “modest,” and “negligible” is used in the following assessments.

### A. Strategic Assessment

34. This is rated as “substantial” because of the strategic focus and alignment on the infrastructure, but not high, given the partial alignment in the tourism, health, and agriculture sectors. The success of a cooperation program depends on its benefits exceeding its costs, and the largest

<sup>35</sup> Human immunodeficiency virus/acquired immunodeficiency syndrome.

benefits have come from focusing on the type of cooperation that addresses the subregion's fundamental challenges.<sup>36</sup> For the contiguous GMS, the primary challenge is to develop more seamless borders that will facilitate the movement of goods and people. Thus, the GMS RCSP rightfully built on the three Cs of connectivity, competitiveness, and community. With ADB's involvement as secretariat, adviser, and honest broker, the cost of collective action has also been subsidized, thus increasing the net benefits.

35. The alignment of the GMS RCSP with country and ADB priorities is clear in some sectors but not in others. The evaluation of the implementation of the LTSF, 2001–2006<sup>37</sup> reviewed the alignment of several RCSPs and country strategies and programs (CSPs) by checking the programmed loans for regional cooperation found in CSPs against the program loans found in the RCSPs for the respective DMCs. Of the five GMS country partnership strategies (CPSs) reviewed, only the Viet Nam CPS was fully aligned, the Thailand CPS was not aligned, and the others were partly aligned.<sup>38</sup> Sector alignment also varied considerably. In energy, for example, the GMS flagship project to expand electricity trade through hydropower development and regional transmission interconnection was also a priority in the national investment programs. The GMS Theun–Hinboun Hydropower Project pioneered public–private partnerships within ADB. Capacity-building efforts have focused on assisting the Subregional Electric Power Forum, preparing the regional master plan for power interconnection, formulating the general design regional power trade operating agreement, developing a GMS energy sector strategy, and addressing issues related to environmentally sustainable development of electricity infrastructure in the GMS. Both the investment and capacity-building efforts correctly targeted a key development challenge in the region relating to limited access to modern energy services.

36. In road transport, the GMS transport corridors in the RCSP were all priority projects within individual government public investment programs. For example, Cambodia's First Socioeconomic Development Plan (1996–2000) mentioned that rehabilitation of route national (RN) 5 and RN1 (Phnom Penh–Viet Nam border) were the first priorities in transportation, thus coinciding with the GMS Southern Corridor. The first GMS transport sector study prioritized the development of the Southern Corridor, East–West Corridor, and Northeastern Corridor.

37. The GMS Transport Sector Strategy of 2006 expanded the three transport corridors to nine, reflecting the growing aspirations of the member countries. While this has increased the scope and size of the GMS program, ADB and the countries need to review the investment requirements, as there is a clear funding gap and a need for prioritization. In addition, the concept of economic corridors (i.e., linking infrastructure development with production and trade opportunities in a specific area) was envisaged as early as 1998 during the Eighth Ministerial Conference,<sup>39</sup> and was embedded in the GMS RCSP. However, the lack of such integration until now shows that the original objectives established in 1998 have been only partly reflected in the sector strategies. The corridors were originally intended to be growth poles so that road links would lead to economic corridors with associated infrastructure and productive activity, thus providing the bigger picture of how transport connectivity can be used by the countries to increase their agricultural and industrial production and to better respond to the challenges of global manufacturing and the rising domination of Asian industries. These economic corridors have yet to develop, and there is a need for a more comprehensive approach that entails complementary

<sup>36</sup> ADB and the Commonwealth Secretariat. 2005. *Toward a New Pacific Regionalism*. Manila.

<sup>37</sup> ADB. 2007. *Special Evaluation Study on Long-Term Strategic Framework: Lessons from Implementation (2001–2006)*. Manila.

<sup>38</sup> Of the 14 CSPs reviewed in the LTSF evaluation, close to half (43%) of the programmed loans for regional cooperation found in the CPSs were not aligned with their respective RCSPs. Only one third (29%) of the CSPs reviewed had regional cooperation programs that were aligned with their respective RCSPs.

<sup>39</sup> The opportunity for multilateral dialogue that focuses on the core objectives of the GMS economic corridors as identified during the Eighth GMS Ministerial Conference is a key benefit of the GMS program.

interventions directed at improving the investment climate and attracting private sector investment along the road corridors to convert them into economic growth poles.<sup>40</sup>

38. As a means to support the emergence of a vibrant private sector, the GMS RCSP notes ADB efforts at the national level to assist small- and medium-sized enterprises and address legal and institutional deficiencies in property rights and contract law. At the regional level, it highlights the importance of improving transport and communications networks and making utilities more efficient to enhance private sector competitiveness. The RCSP also emphasizes the need to revitalize institutions like the GMS Business Forum (GMS-BF) to help develop platforms for dialogue and information sharing for the private sector.<sup>41</sup> The GMS-BF took this mandate a step further by actively working toward strengthening investment promotion, investment facilitation, and regulatory framework in the GMS, in collaboration with the GMS Subregional Investment Working Group (SIWG). Close interaction between the two is most crucial, since the private sector members of the GMS-BF (representing the respective chambers of commerce and industry of the GMS countries) make the actual investments, while the government members of SIWG influence the decisions to invest by the private sector. More importantly, SIWG should seriously consider the priorities being identified by the GMS-BF as requisites to enable greater GMS competitiveness.

39. Trade facilitation under the GMS RCSP has now replaced the earlier bilateral approach. Since the early 1990s, GMS countries had developed bilateral road transport agreements with their immediate neighbors to enable smoother land border crossings, especially for trade.<sup>42</sup> These bilateral agreements constitute the basis for regulating current border-crossing movements. Only one tripartite agreement was signed—by Lao PDR, Thailand, and Viet Nam in 1999—which became the foundation for the current CBTA. The general view among member countries is that, although the CBTA has taken a long time to develop and there are difficulties in implementation, it is crucial to developing a uniform system enabling freer trade flows across the subregion, given the regional additionality achieved through such cooperation. The alternative to the CBTA would have been to develop further bilateral agreements, which would not guarantee free flow of vehicles and passengers across all the GMS countries as international transit will continue to be impaired. The GMS Strategic Framework for Action on Trade Facilitation and Investment (SFA-TFI) is currently being prepared, and is expected to address policy and institutional issues related to the treatment of border and behind-border issues, as well as the development of policy stances and negotiation capacities in relation to the world trading system and free trade agreements.

40. The GMS RCSP focuses its tourism objectives on (i) enactment of a single-destination GMS visa, and (ii) provision of infrastructure and other assistance to ensure access to major culturally important tourist sites and to prevent their degradation. Actual GMS tourism initiatives have mainly focused on infrastructure improvement, community-based tourism, encouragement of private sector involvement in marketing and promotion, and mechanisms supporting the adoption of a single GMS visa. Capacity-building efforts have focused on sustainable tourism, tourism training and skills development, and development of a regional tourism strategy; and an independent secretariat (MTCO) has been established in 2006 to coordinate regional tourism activities and support the TWG. However, there has been little progress on the key issue of introducing a single GMS-wide visa for tourists. While tourism is clearly a priority for the countries concerned, it is less clear that it is well-aligned with ADB priorities. Tourism development was not included as a priority area in the first LTSF (footnote 12), and it is also not included as one of the five core areas of operations in the *Strategy 2020* framework (footnote 13). The latter recommends that 80% of ADB's aggregate operations fall within the core areas, with the

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<sup>40</sup> There are ongoing efforts to clearly establish the nature and objectives of specific economic corridors and the strategies and actions needed to achieve them, as well as the building of institutions to effectively coordinate and implement corridor development activities.

<sup>41</sup> At present, the private sector provides 50% of the Business Forum's budget, while ADB provides the other 50%.

<sup>42</sup> Bilateral agreements exist between Viet Nam–Cambodia, Viet Nam–Lao PDR, Viet Nam–PRC, and PRC–Lao PDR.

remainder in three other areas where its presence is needed. It is not clear that ADB support is specifically necessary for tourism, particularly since it is difficult to foresee the small-scale community-based tourism that may have a direct involvement of the poor being a large part of the sector in the GMS, and because the regional public aspects of tourism appear limited.

41. ADB support for the environment is through RETA, not project loans. The GMS RCSP's emphases on addressing flood management and improving environmental information systems and effective enforcement of environmental regulations are well aligned with country and ADB priorities. However, given the importance of water resources generally in the GMS and the critical importance of wetlands, rivers, and lakes from a conservation perspective, the poor alignment of the GMS environment program with water resource management is a shortcoming.<sup>43</sup> While a number of GMS TA operations involved flood mitigation, wetlands, and the Mekong River Commission (MRC) to gradually introduce these sensitive issues, more effort is needed to resolve subregional water resource management issues. Member government environment ministries are in control of program policy and plans, and regional cooperation is generally good due to existing networks of nongovernment organization (NGO) partners. However, environmental considerations are not yet fully integrated into all aspects of policy, and the coordinating roles of the WGE and of environment ministries in this regard could be strengthened over time. Nonetheless, progress is being made.

42. The GMS RCSP refers to the provision of TA on agriculture; given that the majority of the GMS population depends on it for food and livelihood. However, it does not elaborate on a GMS strategy for agricultural cooperation. ADB's involvement in agriculture in the GMS is very modest, with a total of \$6.8 million in special grants and RETA approved since agriculture was added as a GMS sector in 2001 (its strategic framework and program was endorsed in 2007). Its share in special grants is 2% and in RETA is 6% (see working paper on agriculture). The original aim in including the sector in the GMS-SF was to link agriculture initiatives with the road corridors and trade facilitation. However, the small agricultural program has not been able to link with the corridors and has focused on a diverse set of topics including transboundary animal disease control (although this has a strong regional public good component), biotechnology assistance, biofuels, and support for the Working Group on Agriculture (WGA).

43. The GMS RCSP not only emphasizes the need to address social impacts associated with greater connectivity (e.g., communicable disease transmission and illegal trafficking), but also seeks to tap into possible synergies from collective actions not limited to economic corridors. These HRD objectives are fully consistent with the focus of the 2001 LTSF on inclusive social development. However, *Strategy 2020* approved in 2007 directed ADB to be very selective in its health interventions and engage in direct partnerships with specialized health organizations. An operational plan for health<sup>44</sup> was issued in October 2008 to clarify that ADB will continue to provide leadership and assistance for regional public goods on health,<sup>45</sup> given its ability to bring diverse stakeholders and disciplines together, its organizational structure that covers the entire region, and its ability to combine technical knowledge with development finance.

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<sup>43</sup> While political sensitivities surrounding water issues are recognized (according to Linn, Johannes. 2008. *The Experience with Regional Cooperation's Organizations: Lessons for Central Asia*. Mimeo, the development of regional water and energy resources can be one of the most difficult areas in which to make cooperation progress), it would have been useful to strengthen their coverage in nonthreatening ways, such as focusing attention on wetlands through the Biodiversity Conservation Corridors Initiative (BCI), using integrated watershed management planning approaches in key watersheds under the BCI program, and conducting subnational strategic environmental assessments to produce development strategies and master plans for strategic wetlands.

<sup>44</sup> ADB. 2008. *An Operational Plan for Improving Health Access and Outcomes Under Strategy 2020*. Manila (paras. 22–24).

<sup>45</sup> Including targeted support for pandemic control; contaminated food exports and water; global health security issues (like biological, chemical, and radio nuclear terrorism); and smoke haze.

44. The RCSP also aims to build the GMS countries' institutional and human capacities to undertake regional cooperation, which are in consonance with the 1994 Regional Cooperation Policy and the 2006 RCIS. One RCSP thrust that did not merit much discussion in the various CSPs (except in Viet Nam and an earlier CSP for Thailand) is the need to harmonize training standards, skills certification, and accreditation of training institutions, as well as to encourage networking among higher education and training institutions to update the region's research and development base.<sup>46</sup>

45. The work under pillar 3 of the RCSP on monetary and financial cooperation has not been adopted under the RCSP. However, OREI is working on this aspect through regional policy dialogue with ASEAN, ASEAN+3, and other regional cooperation bodies. The Asian Bond Market Initiative is a key focus on this area. It is expected to develop (through voluntary participation) an efficient and liquid bond markets in the region and foster a high degree of financial independence in Asia. However, the progress has been limited in the GMS due to the underdeveloped nature of the financial systems in the area. More could be done in the area of finance and capital markets in terms of harmonization and collaboration in payment systems; customs and border formalities; trade and investment practices; and capital market development (including regulations, cross-listings, and finance mobilization).

## **B. Institutional Assessment**

46. From the perspectives of country ownership, resource mobilization, and capacity building, overall the rating for institutional assessment is "substantial," with sector variations. In general, the working papers identify a recent trend toward greater country ownership of and involvement in the GMS, both in terms of a willingness to meet costs and in terms of certain policy initiatives. A survey of GMS opinion leaders cited under the evaluation review of the LTSF (footnote 37) revealed that the majority perceived regional cooperation to be a high ADB priority, testifying to their high regard for ADB's involvement in the GMS. The LTSF review also noted that closer trade and investment ties between countries often emerge prior to any formal arrangements. However, one of the lessons highlighted in the World Bank's 2007 evaluation of its regional operations<sup>47</sup> is that there should be a clear delineation of roles between national and regional institutions. The report proposes that national institutions undertake actual implementation, while regional institutions should be tasked with coordination, data gathering, TA, dispute resolution, and monitoring and evaluation (M&E). In the case of the GMS, the bulk of the subregional work is performed by "informal" bodies like the sector working groups (assisted by secretariats for selected sectors) and the overall Senior Officials Meeting (supported by a GMS unit based at ADB headquarters).

47. Overall, there has been an increase in the number of bilateral and other regional groupings of which GMS countries are members (the "spaghetti bowl" effect mentioned in Appendix 4). Table 6 summarizes the effect. Viet Nam is the most extreme case, being a member of 13 such groupings. Many of the activities covered by such groupings overlap with GMS initiatives. The 2004–2008 GMS RCSP recognizes several other regional groupings. For example, of the Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy (ACMECS), it states that ACMECS "...is a welcome development signaling the emergence of Thailand in a strategic partnership role as a donor. With the GMS serving as the backbone, its initiatives are expected to complement and to be closely linked to ADB support for the subregion." In a similar way, ADB sees the Cambodia, Lao PDR, and Viet Nam Growth Triangle as complementing the development of economic corridors. While this overlap could result in increased workloads for senior government officials in some sectors and lead to confusion among policy makers, it also shows that regional cooperation has taken root, perhaps due to the prolonged influence of the GMS program. Since many of the groups have strong government

<sup>46</sup> The GMS HRD Strategic Framework and Action Plan currently being drafted under the GMS RETA to strengthen HRD cooperation seeks to address these gaps.

<sup>47</sup> World Bank. 2007. *The Development Potential of Regional Programs: An Evaluation of World Bank Support of Multicountry Operations*. Washington, DC.

ownership, they can be considered a prelude to the long-term sustainability of regional cooperation and greater management of the economic and political aspects of the GMS program by the GMS countries.

**Table 6: GMS Country Membership of Regional and Subregional Groupings**

Country	G M S	ASEAN	ASEAN +3	A C D	A S E M	M B D S	SEAMEO	ACMECS	MRC
Number of Members	6	10	13	30	45	6	10	5	4
CAM									
LAO									
MYA									
THA									
VIE									
PRC	<sup>a</sup>					<sup>a</sup>			
Country	NARBO	C L V	E G T	IMT-GT	CAREC	S C O	APEC	BIMSTEC	MGC
Number of Members	11	3	3	3	8	6	21	7	6
CAM									
LAO									
MYA									
THA									
VIE									
PRC									

ACD = Asia Cooperation Dialogue; ACMECS = Ayeyawady–Chao Phraya–Mekong Economic Cooperation Strategy; APEC = Asia–Pacific Economic Cooperation; ASEAN = Association of Southeast Asian Nations; ASEM = Asia–Europe Meeting; BIMSTEC = Bay of Bengal Initiative for Multisectoral Technical and Economic Cooperation; CAM = Cambodia; CAREC = Central Asia Regional Economic Cooperation; CLV = Cambodia, Lao People’s Democratic Republic, and Viet Nam; EGT = Emerald Growth Triangle, GMS = Greater Mekong Subregion; IMT–GT = Indonesia–Malaysia–Thailand Growth Triangle; LAO = Lao People’s Democratic Republic; MBDS = Mekong Basin Disease Surveillance; MGC = Mekong Ganga Cooperation; MRC = Mekong River Commission; MYA = Myanmar; NARBO = Network of Asian River Basin Organizations; PRC = People’s Republic of China; SCO = Shanghai Cooperation Organization; SEAMEO = Southeast Asian Ministers of Education Organization; THA = Thailand; VIE = Viet Nam.

<sup>a</sup> Only Yunnan and Guangxi Zhuang Autonomous Region are members.

Sources: Asia Regional Information Center and Operations Evaluation Mission.

48. In energy, the GMS countries have demonstrated a high level of ownership of sector programs and activities, illustrated by the active and sustained participation of government representatives in the Electric Power Forum, Experts Group on Power Interconnection and Trade, and Regional Power Trade Coordinating Committee. Nevertheless, some questions have been raised as to whether the plans for energy grid development are wholeheartedly supported by all member governments.<sup>48</sup> Resource mobilization in the sector through ADB initiatives in leveraging large sums of capital from the private sector with the use of the public–private partnership modality for two hydropower projects in the Lao PDR was very successful. ADB acted as the lead coordination agency for the government’s negotiations with foreign investors in the Theun–Hinboun Power Company investment and provided legal and financial advice in the form of a TA grant. ADB played a major role in this first foreign direct investment and large commercial lending.<sup>49</sup> However, due to the limits on concessional ADF funding, it could be increasingly difficult to fund regional energy projects in the pipeline unless borrowing can be from the more expensive ordinary capital resources. Capacity building in energy is also found to be very useful, with TA assisting the Subregional Electric Power Forum, preparing a regional master plan on power interconnection, formulating a regional power trade operating agreement, developing a GMS energy sector strategy, and addressing issues related to environmentally sustainable development of electricity infrastructure.

<sup>48</sup> ADB. 2007. *Unraveling the Greater Mekong Subregion Program: An Overview and Update on Key Structures, Program, and Developments*. Manila.

<sup>49</sup> ADB. 2002. *Project Performance Audit Report on the Theun–Hinboun Hydropower Project (Loan 1329-LAO) in the Lao People’s Democratic Republic*. Manila.

49. In transport and trade facilitation, there is growing participation and commitment by governments. The most recent example of this is funding provided by PRC and Thailand for rehabilitation of the North–South Economic Corridor in the Lao PDR. PRC and Thailand have also agreed to share the cost of the international bridge connecting Houayxay in the Lao PDR with Chiang Khong in Thailand. In the case of the trade facilitation activities, the customs departments are introducing simplification and harmonization of procedures with a view to full implementation of the CBTA by 2010, although there are doubts whether this deadline is realistic. ADB's assistance to the public works departments has supported project planning and road maintenance management, and an ongoing TA is preparing customs staff for implementation of the CBTA. Institutional development within the GMS transport program has had only limited success, however, since the overall attitude was biased in favor of addressing national constraints rather than developing subregional arrangements. A key issue facing freight forwarders and truck operators in the GMS is cross-border transactions relating to freight and vehicle insurance and customs duty for transit goods. For example, it is difficult to obtain vehicle insurance at reasonable prices for a Cambodian vehicle crossing the border into Viet Nam. A regional transport association could address such issues, and the proposal of the GMS-BF to set up a GMS transporters association to implement the CBTA transit regime is a positive step. Wider awareness among the relatively small-sized transporters about the proposed GMS transporters association is important in bringing local companies into the fold of the GMS-BF, and is an activity that ADB may want to support to develop such regional institutions. Prior to 2003, the Subregional Transport Forum was the platform for discussing issues related to the CBTA. Subsequently, the national transport facilitation committees took over its negotiation, finalization, and implementation. The GMS program established a STFWG, which was dormant for a few years and was not directly involved with the development of the CBTA. It is now in the process of developing the SFA-TFI, which links with the CBTA on specific issues such as customs and quarantine.

50. In the tourism sector, institutional performance needs improvement. The MTCO is suffering from serious financial and related staffing difficulties due to lack of private sector funding. Despite significant TA activity, capacity-building efforts have only scratched the surface, as specialist skills in the sector remain weak. Most officials in provincial and district tourism offices lack the necessary knowledge to undertake basic tourism planning, marketing, regulatory, and monitoring functions, and to mainstream poverty reduction into their plans. Managers of tourism heritage sites do not have the competencies needed to manage sites on a sustainable basis. However, there has been evidence of local ownership, with national tourism authorities very active in the TWG and making a strong contribution to the GMS Regional Tourism Sector Strategy. In addition, national authorities recently have provided financial and in-kind support for the TWG and its new Secretariat, the MTCO in Bangkok (Box 2). Since 2006, at the bi-yearly meetings of the TWG, each country has covered the travel and accommodation costs of its own participants, and the host country has met the venue-related costs. Similarly, the host Thailand and each GMS country contribute to the operating expenses of the MTCO. Since November 2008, the MTCO's executive director position has been filled and it is expected that some of the capacity constraints will be resolved soon. If the MTCO's capacity constraints are weighed against the greater ownership demonstrated by the GMS countries, the net benefits would be positive.

### **Box 2: Mekong Tourism Coordination Office**

The Mekong Tourism Coordination Office (MTCO) was set up in February 2006, with seed funding from the Greater Mekong Subregion (GMS) Tourism Working Group (TWG) to represent the six participating governments to replace the agency for coordinating Mekong tourism activities. The TWG designed the MTCO to have the following primary functions: (i) coordinate and monitor 13 priority tourism corridors in the GMS, (ii) market the GMS as a single travel and tourism destination, and (iii) act as secretariat of the TWG. Under the Regional Tourism Sector Strategy, the MTCO is to be headed by a full-time executive director and is assisted by a program coordinator. It has had difficulty in filling the position of executive director, which was vacant between April 2007 and November 2008. Although secondment of staff from each of the national tourism organizations (NTOs) to the MTCO was envisaged as a means of promoting close contact between them, there has been reluctance from NTOs to pursue this option. Consequently, MTCO has found itself to be seriously short of staff. These constraints were addressed by the continued backstop support provided by the GMS

Secretariat based in Asian Development Bank headquarters and the secondment of a tourism development expert by the French Government.

Since 2006, the NTOs have contributed financial and in-kind support to the bi-yearly meetings of the TWG. However, the MTCO was to be funded jointly by the GMS governments and private sector donations. The latter did not materialize, because the private sector preferred funding projects that provided specific and tangible benefits. Hence, the TWG is currently wholly financed by government contributions (\$15,000 per country per year), support from the French Government for the coordinating officer, and office space from Thailand. With relatively poor compliance of some countries with the funding agreement, it is not clear how long the funding arrangement can be sustained. In response, the MTCO has been quite conservative with its expenses. The Marketing Fund amounting to \$25,000, representing leftover funds for marketing activities before the MTCO was organized, remains untouched, although MTCO has recently made some suggestions about how to put these funds to good use. There are indications that the business community remains interested in being involved in tourism marketing activities, but not in supporting the operational expenses of the MTCO. A midterm review of the 2002 GMS Strategic Framework recommended sustaining, restructuring, and streamlining the operations of the MTCO and observed that private sector entities are not likely to contribute directly to MTCO operations unless they are able to obtain concrete services useful for their own purposes.

MTCO achievements to date include (i) together with the private sector, implemented ad hoc publicity and promotion activities in 2006 and 2007, including GMS presentations at trade shows, production of GMS maps, brochures, posters, and guide books; (ii) revitalized the GMS tourism website ([www.mekongtourism.org](http://www.mekongtourism.org)); (iii) support for the GMS countries' firm stand against child sex tourism, offering its website as a platform to disseminate information; (iv) follow-up on existing and past initiatives in private sector participation such as the GMS Business Forum, and 2007 Small- and Medium-Sized Enterprise Forum; and (v) development of a database on travel facilitation initiatives. The Operations Evaluation Department's findings reveal that current operations of the MTCO have been less efficient in terms of organization and coordination of regional activities due to difficulties related to funding and staff. Unless the MTCO receives additional staff and financial resources, it will not be able to meet the envisaged objectives as indicated in the Regional Tourism Sector Strategy. While the MTCO is self-funded, findings suggest that it is a special case, with relatively little scope for replicating its institutional and self-financing mechanism in other GMS sectors. The advantages of strong country ownership under the current system appear to be negated by resource and staffing uncertainties. Once it is fully staffed, the MTCO should redouble its efforts to secure the needed private sector financing.

Sources: Asian Development Bank. 2005. *The Greater Mekong Subregion Tourism Sector Strategy*. Manila; and ADB. 2007. *Midterm Review of the Greater Mekong Subregion Strategic Framework (2002–2012)*. Manila.

51. In the environment area, the institutional assessment is quite positive mainly because of the high degree of local involvement in the program. The early development and implementation of the environmental program was largely in the hands of ADB and NGO partners. However, as key stakeholders at higher policy levels in member nations gained a better understanding of the Core Environment Program, their ownership of and commitment to the program grew. This is reflected in the Joint Ministerial Statement<sup>50</sup> of the last Environment Ministers Meeting in early 2008, which placed a high priority on sustainable development and poverty reduction through sound environmental management. The joint statement delivered clear orders to the WGE on the need to incorporate environmental assessments across all sectors and activities. As a reflection of the same trend, the WGE representing the member countries is now increasingly taking the initiative in its dealings with its secretariat—the EOC (Box 3). However, since the GMS is not bound by a legal structure, the EOC itself cannot be considered a legal entity. While the EOC provides a model for a regional entity detached from ADB, how its day-to-day contractual obligations can be administered in the absence of a legal structure needs to be resolved. A key aspect of the environment program is the Biodiversity Conservation Corridors Initiative (BCI). Here, questions have been raised about implementation, since in all member countries but Thailand, the budget and planning for this initiative are under the control of NGO partners instead of government agencies (see environment working paper). Although this arrangement draws on the expertise and commitment of NGOs, it detracts from enhancing government ownership.

<sup>50</sup> Joint Ministerial Statement. 2008. The Second Environment Ministers' Meeting. Vientiane (28 January).



### Box 3: Evaluation Findings Regarding the Environment Operations Center

The Environment Operations Center (EOC) was established in 2005 mainly to coordinate and facilitate the timely and effective implementation of the Core Environment Program (CEP) and to provide oversight of program activities implemented by government and nongovernment organization partners. It was also to support functions for the Greater Mekong Subregion (GMS) Working Group on Environment (WGE), which had been initially supported by staff based at Asian Development Bank (ADB) headquarters, assisted as appropriate by the United Nations Environment Programme Regional Office based in Bangkok. The EOC is attached to ADB's Thailand Resident Mission in Bangkok, as it has no legal standing on its own, but it is functionally autonomous. Further linking the EOC more closely with respective ADB resident missions would help to promote its role.

The EOC was designed to be staffed by people on secondment from government (at least two technical staff from each country participating in the CEP, but this is not yet accomplished) and development partners. Equipment and operating costs are financed from project funds. The long-term goal, however, is to anchor the EOC institutionally to the GMS by 2014. Current CEP financing runs only for the first 3 years of operation (phase I), and the sustainability of EOC activities will depend on additional funds coming in after phase I. The key functions of the EOC are to (i) foster information sharing on the GMS environment; (ii) promote GMS environment management and conservation; (iii) advise on sustainable development design, environmental assessment, and oversight; (iv) serve a coordination and liaison role for the GMS environment; and (v) serve as the Secretariat for the WGE.

The EOC is effective in its key role of coordinating the CEP and implementing partner activities. Understandably, during the early stages of CEP implementation, the EOC has had to push the CEP agenda largely by itself, and GMS country leadership has not been particularly strong. This led to some criticism from implementing partners, who saw the EOC as forwarding ADB's agenda rather than that of the GMS. However, GMS governments' ownership of and commitment to the program have since grown, as key stakeholders at higher policy levels gained a better understanding of the CEP. One result of this growing ownership is that the EOC is increasingly being issued with WGE instructions rather than having to take the lead in WGE policy implementation. The EOC is responding to this by reacting rapidly to CEP priorities and through a process of "GMS-ization" under which some EOC positions are being transferred to staff recruited from the subregion.

The EOC also develops capacity by organizing formal training, hands-on support for program activities, and its system of internships where graduates from member governments can work in the EOC for 3–12 months. Opportunities for internships in the EOC are being taken up by member countries. The EOC UniNet program helps to network the CEP with some 12 universities from within the subregion and elsewhere. Not only does this allow CEP to access specialist skills and training resources for capacity development, it also ensures that lessons from the program are incorporated in tertiary level environmental education.

The EOC's performance has, therefore, added significantly to CEP effectiveness. However, the lack of effective coordination within ADB and among various government sector departments means that potential synergies among regional and national assistance to the GMS countries are being lost, which is affecting the EOC's ability to mainstream and embed the environment in the planning processes of other sectors. There has also been some criticism from CEP-Biodiversity Conservation Corridors Initiative partners, who feel that they have not been considered true partners. Another apparent weakness of the EOC is its structural relationship with the Technical Advisory Panel (TAP), which comprises seven internationally recognized professionals providing independent policy and technical advice to the WGE. EOC communications with the TAP have not been smooth, thereby limiting the effectiveness of TAP advice that is crucial to the CEP. The EOC has been quite efficient. Its overhead cost is only around 7% of total expenditures. However, one issue brought up in a 2007 Finnish appraisal report mentions the CEP's dual reporting and approval arrangement, wherein both the WGE and the EOC (the latter acting on behalf of ADB/executing agency) have responsibility for approving annual budgets, work plans, and reports. The duplication of accounting procedures in both the EOC and ADB headquarters has apparently also led to slow liquidation of expenditures.

Sources: ADB. 2007. *Midterm Review of the Greater Mekong Subregion Strategic Framework (2002–2012)*. Manila; and Axberg, Göran Nilsson, and Mäkelä, Merja. 2007. *Appraisal Report: Final Report. Appraisal of Finnish Support to the Core Environmental Program and Biodiversity Conservation Corridors Initiative in the Greater Mekong Subregion*. Stockholm.

52. The institutional arrangements for agriculture, while appropriate in the context of early development, need to be further improved in the future. There has been continuity in government representation in the WGA, with the original WGA national coordinators being unchanged over the years, which has been critical at this early phase of sector development. Although the WGA Secretariat has tried to emphasize the regional cooperation dimension, it has been difficult to maintain this focus because of the member countries' diverse interests and varying national contexts. The

strong ownership demonstrated by the GMS countries in support of the agriculture agenda has come at the expense of moving away from the GMS economic corridor concept. Given the significant overlaps between the Core Agriculture Support Program (CASP) and ASEAN, there has been lukewarm interest from external parties in becoming more involved in financing GMS agricultural initiatives. This applies pressure on ADB to face the GMS countries' heightened expectations for more active agriculture sector involvement with its own resources in the context of *Strategy 2020*, which does not emphasize operations in this sector.

53. In the health and other social subsectors, the institutional arrangements are weaker. The lack of continuity and prioritization of country participation in Working Group on Human Resource Development (WGRHD) meetings suggests there is less government ownership compared with the other GMS sectors.<sup>51</sup> During the various forums, there appears to be greater interest among the GMS countries to collaborate on communicable disease control (CDC) but less action on trafficking and labor training. On a positive note, ADB's engagement of the World Health Organization and the United Nations Educational, Scientific, and Cultural Organization in GMS activities has helped to enhance their institutional capacities.

### C. Value Addition

54. This criterion can be addressed in more detail through the detailed data provided in the "bottom-up" analysis that follows this chapter (paras. 88–93, 110–112, 121, 125, 130, and 135). From the evidence of interviews and existing reports, the rating is "successful" for many sectors. For energy, the GMS has facilitated export of hydropower from Lao PDR to Thailand and has focused on optimization of the region's energy resources through discussion on power trading more widely within the subregion. For transport and trade facilitation, while some of the projects could still have been realized without ADB support, funding limitations in the national budgets or other external financing would have created delays and reduction in the size of the projects. For trade facilitation, bilateral agreements have been entered into (for example the Lao PDR–Thailand transit agreement), but unlike the CBTA these do not address transit trade among three or more countries. The CBTA intends to harmonize customs procedures, registration of vehicles, licensing of transport operators, road standards, multimodal transport, container logistics, and the handling of transit traffic among the member countries, and once implemented this should be a major contribution to reducing trade costs. For tourism, the GMS has provided a platform for collaborative solutions to marketing the subregion and developing tourism circuits, for example, based on the heritage sites. The main failing is the inability to resolve the common GMS visa issue, which would provide a significant boost to GMS-wide tourism. For environment, the key additional contribution of the GMS program is the leveraging of additional non-ADB external support, promoting the involvement of international NGOs, and introducing environmental planning methodologies to member governments. For example, Viet Nam now uses the strategic environmental assessment (SEA) methodology widely, and the PRC uses it in two counties of Yunnan, while the Lao PDR has used SEA in a provincial development master plan for Champasack. In terms of health, there are reductions in the (aggregate) number of people living with HIV/AIDS and malaria cases reported, and their containment means lower risks of infection within and outside GMS countries. According to RETA 6171 (Appendix 2) which reviewed poverty impacts of RCI in the GMS, the most impact on poverty reduction in the poorer GMS countries came from labor migration, with migrant remittances being pivotal in financing social services.

55. Overall, the GMS program has contributed positively to supplement the benefits of the national programs. First, the provision of additional soft funds from the ADF regional pool for Cambodia, Lao

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<sup>51</sup> The draft HRD Strategic Framework and Action Plan (as of May 2008) envisioned the creation of four subsectors under HRD: education, health, labor and migration, and social development. It also supported the conduct of annual subsector meetings and biennial full Working Group on HRD meetings. It also sought to elicit commitment from GMS countries to maintain the same focal group representatives for several years.

PDR, and Viet Nam has reduced their cost of financing and freed up public resources for other sectors. Second, the program has generated economies of scale for the smaller countries by expanding access to new markets, including the development of transit traffic. Third, these countries appear to have been able to receive additional funding for regional projects over and above the funding provided for national programs. Finally, with the development of new subregional links, countries such as PRC and Thailand have access to alternate means of trade that are more efficient and cost-effective than traditional sea routes. The recent LTSF evaluation (footnote 37) also found that the GMS program provided a valuable facilitative role for regional dialogue, leading to unprecedented and sustained level of dialogue at the ministerial level, bilateral, and multilateral agreements and increasing participation of stakeholders.

#### **D. ADB Performance**

56. This was assessed from discussions with government officials and other stakeholders, as well as ADB staff, and the results of project completion and evaluation reports. In general, performance is assessed “substantial” with room for improvement. There are areas of concern that cut across individual sectors and areas, where it is “modest.” ADB has played a catalytic role effectively. It has encouraged and supported member countries with technical expertise while providing its own funding and leveraging that of other sources, in the case of power including the private sector. However, there have been difficulties both in management and administration within ADB and in coordination at the country level between GMS activities and between GMS and national projects. There have also been above average delays in GMS projects and RETA operations across all sectors for a variety of reasons, some outside the control of ADB. With the changing political environment in the GMS where member countries are now more actively engaged, ADB needs a clear view of how it will continue its value added to the GMS program to ensure its long-term sustainability.

##### **1. Administration and Internal Coordination**

57. As noted in paras. 24–27, coordination across sectors within ADB and also between sector departments in member countries is weak. Hence, overall coordination is rated “modest.”

58. The LTSF evaluation (footnote 37) noted that there has been much reorganization of staff and responsibilities in relation to the implementation of regional cooperation, but limited progress in unifying efforts across units.<sup>52</sup> Currently, OREI has the responsibility for facilitating and coordinating ADB activities on trade and investment and monetary and financial cooperation, but has no authority to oversee the regional cooperation activities of other departments. Similarly, while RSDD manages most of ADB activities on regional public goods, it had to defer to SERD for similar activities undertaken in the GMS.

59. In 1995, GMS ministers mandated ADB to provide technical, administrative, and coordinating support on a continuing basis, which includes monitoring and supporting the work of operational forums and working groups on behalf of the Ministerial Conference and in cooperation with the national coordinators. In recent years, ADB has responded to growing country interest in fuller participation in decision making. In 2001, a review of the institutional framework for the GMS was conducted and presented during the midterm review in Bangkok.<sup>53</sup> The study suggested operational mechanisms to strengthen the GMS institutional framework and recommended that ADB “provide the foundation for an increasing role of the GMS countries in the management of the GMS program, for instance, in the transformation of its Central Secretariat role over time to provide for an increasing responsibility of the GMS countries in certain activities.” It was recognized that this proposal requires

<sup>52</sup> In 2002, ADB transferred responsibility for the GMS program from Division 3 of the Programs Department to the entire SERD.

<sup>53</sup> Abonyi, George, and Carolina Guina. 2001. *GMS Institutional Framework: Review and Recommendations*. Presented during the GMS Midterm Review cum Senior Officials Meeting on 30–31 May. Bangkok.

a shared understanding among the GMS countries and may take time to implement. Another recommendation was to develop separate secretariat support for each working group and forum, with an increasing operational role for the GMS countries. As an initial response to this review, TA was provided to strengthen the capacity of GMS countries to cope with this envisioned role,<sup>54</sup> and as noted in Boxes 2 and 3, there are now separate secretariats for the environment and tourism, distinct from ADB staff support.

60. The 2007 Midterm Review (footnote 8) of the GMS-SF states that the GMS countries' weak capacity and lack of resources to manage the GMS program have resulted in their continued dependence on ADB for providing the necessary secretariat support; but on the whole, the institutional mechanisms and arrangements have "provided an adequate administrative framework for the GMS program." However, given the changing context of the GMS program and the desire of the member countries for an increased role in managing it, the review proposes that adjustments be made to give the GMS countries a greater role in implementation. As a first step, it suggested that the chairs of all sectoral working groups and subregional forums, most of which were previously headed by ADB should be handed to country representatives. The review also repeats the earlier suggestion of letting member countries assume greater responsibility for directing and providing support to forums and working groups.

61. Despite the significance accorded to regional cooperation in the LTSF and the two medium-term strategic frameworks, the 2007 OED study on the implementation of the first LTSF (footnote 37) found that ADB was partly responsive to the organizational requirements needed to promote regional cooperation. Between 2001 and 2005, there was no central guidance in ADB for promoting RCI activities, which resulted in fragmented efforts. In addition, the financial and human resources allocated for supporting RCI activities did not match the demand for them. Between 2002 and 2005, only five regional cooperation specialist positions were opened (ADB-wide), and existing staff were not trained to support ADB's expanding RCI activities. There was also a significant time lag in the implementation of a regional cooperation funding facility<sup>55</sup> (recommended in the LTSF in 2001, but was not approved until February 2007), owing to limitations in ADF resources.

62. There are concerns about weak coordination, both internally and externally. There has not always been good coordination between national and GMS projects, nor a clear distinction between the two (para. 12). Lack of coordination between ADB activities is a particular problem as far as environmental effects are concerned, since a key objective is to mainstream environmental support within the GMS by linking it with all other activities. Up to now, this has occurred to only a limited degree. A clear example of this is the relationship between transport and environmental planning. While the RCSP stresses the need for careful management of social and environmental issues, the GMS Transport Sector Strategy has nothing to say on how this would be done.<sup>56</sup> Similarly, at the project level, the SEA of the North–South road corridor has been initiated after much of the physical infrastructure had already been completed.<sup>57</sup> Until recently, GMS projects were planned and administered from Manila on a sectoral basis, which contributed to this lack of coordination across sectors. The recent decentralization of GMS project administration to resident missions should improve this aspect. Similarly, the transfer of the ADB trade facilitation unit from Manila to Bangkok indicates a response to the complexity surrounding the implementation of the trade facilitation TA.

<sup>54</sup> ADB. 2001. *Technical Assistance for Capacity Building for National Institutions Involved in the GMS Program*. Manila.

<sup>55</sup> ADB. 2007. *Special Evaluation Study on Long-Term Strategic Framework: Lessons from Implementation (2001–2006)*. Manila (Working Paper 6: Long-Term Strategic Framework's Focus on Regional Cooperation).

<sup>56</sup> The Transport Sector Strategy does, however, prioritize several TA operations addressing issues specifically associated with cross-border traffic (e.g., trafficking and smuggling prevention, prevention of cross-border transmission of communicable diseases, coverage for third party victims of cross-border traffic accidents, and reduction of cross-border road traffic hazards) and facilitating coordination between GMS and existing national and regional efforts.

<sup>57</sup> According to Appendix 4 of ADB. 2006. *Environmental Safeguards*. Manila, the PRC transport counterparts have accumulated substantial experience in environmental management for road and railway projects, so the PRC projects would appear to be exceptions.

63. Weakness in coordination also relates to relations between the GMS working groups and forums. An earlier study indicated that there had been little interaction between different sectors and their working groups (footnote 7). The GMS Secretariat has attempted to address this problem through the biannual Senior Officials Meeting and through initiatives such as the GMS newsletter and cross-representation on sectoral working groups. However, it has been raised again in the context of the need for links between trade facilitation and tourism and between the environment and all other activities. Cross-border transport facilitation activities also continue to be distinct from the trade facilitation activities within the government, and this requires streamlining. In May 2008, the GMS Economic Corridors Forum was established as a multisectoral body tasked with overseeing the transformation of transport corridors into economic ones, through improved networking (i) between GMS sectors, (ii) between central and provincial authorities, and (iii) between public and private sectors. It is only recently that members of the WGE have participated in other working groups and that the arrangement is not yet reciprocal (see environment working paper). WGA had also invited the EOC to discuss climate change issues in relation to the respective mandates of WGA and WGE.

64. There is a need for ADB to review its in-house expertise. For instance, because of the increasing size of the transport and trade facilitation portfolio and the shift toward implementing the CBTA, ADB needs to ensure that its staff working on GMS projects have a combination of transport and trade facilitation experience to enable integrated project designs. It should also appoint technically qualified staff in the resident missions to increase interactions with other development partners and facilitate better exchange of information. Finally, ADB staff should create wider awareness of the GMS program among the governments, development partners, and other stakeholders.

## **2. Coordination with Other Aid Agencies**

65. Coordination with other funding agencies by ADB has been largely “high,” with development partners’ meetings being held as a regular feature of GMS ministerial conference since 2002 as well as bilateral meetings with aid agencies, although there are gaps in specific sectors. In transport, there is room for improvement from ADB in increasing the awareness of the GMS program among the other agencies to enable more cofinancing. Typically, externally funded projects continue to be rationalized as national development activities rather than as regional development interventions. For example, the World Bank’s recently approved Lower Mekong Program in Viet Nam has a multisector approach dealing with transportation and water management and bringing significant regional benefits to Cambodia. However, the project has been rationalized as a domestic Viet Nam initiative by the World Bank, as it does not fit the World Bank definition of a regional project (footnote 20). Similarly, rehabilitation of the primary road network in Cambodia and Lao PDR has been cofinanced as national projects by partners including the World Bank and the Japanese and Australian governments. Although the World Bank recently identified a regional work program<sup>58</sup> for its participation in the GMS, there has been limited funding along these lines. UNESCAP does not provide project finance but is an active participant in the Subregional Transport Forum and in the STFWG with collaboration in relation to specific nonfinancial issues, such as road design and trade facilitation, as well as in preparing the GMS countries for negotiation of the CBTA annexes and protocols.

66. A gap in ADB’s links with development partners appears to be in relation to MRC. Although a partnership agreement was signed in March 2000 for cooperation in navigation and river works, there has been little direct contact outside of a few TA operations on flood management. This is evident from the ADB-funded project for the construction of a floating border gate at the Vinh Xuong (Viet Nam)–Kaom

<sup>58</sup> The World Bank’s regional work program basically complements its country assistance strategies and is focused on four themes: (i) support the development and implementation of a Mekong Water Resources Partnership Program; (ii) continue to work on regional power trade; (iii) facilitate increased transport and trade; and (iv) work on human resource issues, especially labor migration. Nevertheless, the World Bank acknowledged that the ADB-coordinated GMS Economic Cooperation Program “should be the umbrella program under which World Bank’s assistance program for the region will be integrated.”

Samnor (Cambodia) border, which will become redundant after MRC's Navigation Program's legal framework for cross-border movement on the Mekong River is implemented.

67. In energy, although there is limited involvement of other agencies, there has been a closer working relationship with the World Bank, which is a cofinancier of the Nam Theun 2 Hydroelectric Project in the Lao PDR. The World Bank has also been an active participant in discussions on regional power trading since their inception and has recently brought out a strategy document in this area,<sup>59</sup> which appears to have sought little input from ADB through consultation in the early stages of preparation. There will be scope for further links with MRC. Partners supporting subregional power trade also include Japan, Swedish International Development Cooperation Agency, and Agence Française de Développement, as the latter recently reactivated its hydropower program.

68. Several development partners are involved in the tourism sector in the GMS, including the United Nations Educational, Scientific, and Cultural Organization; United Nations World Tourism Organization (UNWTO); Pacific Asia Travel Association; and the Netherlands Cooperation Organization. However, the main partner is UNESCAP, with whom ADB has worked closely since the inception of the program. Since 2006, both UNESCAP and ADB have allowed greater GMS country ownership in the functioning of TWG and MTCO, and regular discussions of issues of mutual interest still take place. ADB has been actively promoting the GMS tourism program to other development partners and the private sector to generate further support for the program. As part of this effort since 2003, development partners meetings have been held as part of GMS ministerial meetings or standalone events. These are meant to update partners and seek support for activities under the program, but as yet there is little evidence that they have been successful. There has been little coordination and interaction with the ASEAN and UNWTO in the past. Since 2006, however, UNWTO has attended TWG and tourism ministers' meetings, while TWG members have become more active in the ASEAN tourism program.

69. Coordination in the environment area has been very useful. A large number of aid agencies and NGOs are active in the subregion on environment issues. The prominent role of NGO partners in the GMS Core Environment Program helps for coordination due to their links with many other funding agencies. For example, through the World Conservation Union, there is good coordination with the United States Agency for International Development-funded Asia Regional Biodiversity Conservation Program in the GMS, which brings best practice experience to the GMS BCI. With regard to other regional actors, including partners in the GMS environmental program such as the United Nations Environment Programme, World Conservation Union, and World Wildlife Fund, the coordination and sharing of information is good, but there are areas for fine-tuning the relationships.

70. In agriculture, some observations were made that international organizations contracted to implement RETA operations tend to deliver outputs that fall short of expectations. This is very relevant, given the *Strategy 2020* directive to ADB to go through conduit partners for noncore areas like agriculture. A mechanism ought to be developed to hold such organizations accountable for expected project outputs, either through output-based disbursements, more intensive supervision, or more involved participation from ADB mission leaders.

71. In health and other social sectors, cooperation with other partners has been good, although there is some friction with other partners who do not favor the emphasis on the subregional nature of the GMS projects vis-à-vis their national programs, and the linkages with the GMS economic corridors.

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<sup>59</sup> World Bank. 2007. *World Bank Strategy in the Greater Mekong Subregion for Supporting Development of Power Trade*. Washington, DC.

### 3. Finance Mobilization

72. A key part of ADB's catalytic role has been in leveraging funds for GMS activities, and here the rating is "high." From 1992 to 2007, cofinancing of GMS projects contributed 25% of total project costs, GMS governments contributed 35%, and ADB the remaining 40% (Table 7). Most cofinancing was from bilateral donors (such as Australia, France, Japan, Netherlands, PRC, and Sweden).

**Table 7: ADB-Assisted Loans, TA Projects, and Special Grants under GMS – by Country and Population, 1992–2007**

Countries	ADB (\$ million)	Cofinancing (\$ million)	Government (\$ million)	Total Cost <sup>a</sup> (\$ million)	Population, 2006 (million)	Cost Per Capita (\$)
Cambodia	223	69	80	372	14	26
Lao PDR	286	528	87	901	6	156
Myanmar	0	0	0	0	48	0
Thailand	0	0	0	0	63	0
Viet Nam	1,536	359	296	2,191	84	26
PRC–Yunnan	830	358	1,334	2,521	45	56
PRC–GZAR <sup>b</sup>	702	932	1,222	2,856	50	58
Regional	82	69	14	165		
<b>Total GMS</b>	<b>3,658</b>	<b>2,314</b>	<b>3,034</b>	<b>9,006</b>	<b>310</b>	<b>29</b>

ADB = Asian Development Bank, GMS = Greater Mekong Subregion, GZAR = Guangxi Zhuang Autonomous Region, Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China, TA = technical assistance.

<sup>a</sup> Based on data from reports and recommendations of the President (RRP), total approvals amount to \$10.3 billion.

<sup>b</sup> GZAR was added formally to the GMS in December 2004, but the projects claimed here were approved since 1996.

Note: Classification of GMS operations is based on GMS Secretariat definition. The values for completed projects are based on actuals in the loan and financial information system. For ongoing loans, the values are based on RRP.

Sources: Population data for Yunnan and GZAR were taken from their respective 2007 statistical yearbooks, the rest are from World Development Indicators online.

73. On a sectoral basis, as noted earlier, the bulk of lending has been for transport (principally roads), followed by energy, with small amounts for tourism. RETA operations have been spread more widely, with the environment taking a majority of RETA grants (Appendix 1).

74. A large amount of private sector funding was obtained for the two hydropower dams in the Lao PDR, where ADB provided only between 2% and 22% of project costs. The financing of the Theun–Hinboun Hydropower Project was deemed as a pioneering effort in promoting private sector participation in the GMS and is the largest commercial financing package arranged so far in the Lao PDR. The Nam Theun 2 Hydroelectric Project was able to mobilize over \$1 billion of private sector money relative to the ADB assistance of \$120 million. The GMS transport sector assistance program evaluation noted that each GMS country has initiated separate and independent plans for bringing in private sector resources, thus deterring the principles of regional cooperation. These initiatives have to be coordinated in a manner that encourages uniformity in the GMS and presents consistent incentives for private sector entry into the funding and operation of regional road projects. While the 13th GMS Ministerial Conference in December 2004 discussed the need to improve the enabling environment for private sector development, there are yet to be specific steps taken within the RCSP context to implement these. The GMS transport sector assistance program evaluation identified the following obstacles to greater private sector participation in road infrastructure: (i) low growth in traffic, which endangers adequate returns, although this could be offset by innovative financing structures similar to India's viability gap funding; (ii) fiscal and legal constraints that prevent government from providing guarantees to ensure minimum financial returns to the private sector; and (iii) the current investment climate in Lao PDR and Cambodia, which are not yet favorable for attracting substantial private investment.

### 4. Capacity Building and Technical Support

75. In general, this is rated "modest." Capacity building was provided through sector-level initiatives and through the Phnom Penh Plan. The capacity building at the sector level was geared more toward

national capacity building rather than improving the regional orientation of the activities. Aspects of the training under the Phnom Penh Plan are rated “modest,” as programs are mostly national in nature, and cross-border alumni relations between graduates of the Phnom Penh Plan are not strong (see working paper on institutions and capacity development). While the Phnom Penh Plan has trained and motivated key individuals in GMS governments, it was not designed to strengthen institutional capacity. Hence, efforts to improve the overall capacity of institutions through the introduction of new working practices, organization structure, or roles and responsibilities have been weak. Of the more than 1,200 participants trained, 17% have undergone training in regional cooperation topics, while 45% have undertaken general development management and leadership training, and 38% have focused on crosscutting issues.

76. According to an ADB report (footnote 36), capacity weaknesses in many countries imply that simply aggregating existing national-level resources will tend to create weak and undercapitalized subregional bodies. Hence, capacity development support from aid agencies is crucial. In general, discussions with officials as part of this study did not reveal major concerns over the technical support and capacity building provided by the GMS Secretariat and under the various RETA operations. In Lao PDR and Cambodia, ADB assistance to the public works departments has supported project planning and road maintenance management. More than 20 officers in Cambodia were trained in the use of the Highway Development Management-4 road planning model. However, of these, four have left the public sector, and several more have been transferred to the provincial departments, where they will not necessarily use these skills. Thus, one of the key aspects lacking in project preparatory technical assistance (PPTA) is an assessment of capacity within the government to implement and sustain the projects. PPTA should incorporate suggestions to strengthen capacity-building components within the project design, and RETA should help implement them.

77. In relation to the complex issue of cross-border trade facilitation, while most of the TA operations were rated successful and highly successful by their TA completion reports, some weaknesses in their design can now be discerned in light of complications encountered in CBTA implementation. For example, preparation of the CBTA annexes and protocols under TA 5850 was not sufficiently supported by an analysis of the context in which these regulations were expected to operate. Legal, institutional, and other impediments have been considered and addressed as they are encountered. It seemed that the objective was narrowly focused on having the countries sign and ratify the CBTA legal documents, while there was little understanding among countries of what they need to do to make these agreements operational. A case in point is the planned initial implementation of the CBTA at Mukdahan in Thailand and Kaysone Phomvihane in the Lao PDR. The memorandum of understanding to introduce the CBTA at the border crossing has been signed in 2005, but implementation of the single-stop inspection has been postponed several times, because extraterritorial inspection by border officials is not allowed under their laws. Also, with regard to the training of border officials and the formulation of cross-border operation guidelines, the piecemeal approach to dealing with issues as they arise has hindered implementation.

78. Technical support provided through the GMS Secretariat and other bodies in other sectors is appreciated in member countries. In the energy sector, a range of TA activities have been carried out to address GMS country readiness for regional power trade. In the tourism sector, capacity-building efforts could have been improved by focusing on small- and medium-sized tourism enterprises and provincial and district tourism officials. The capacity-building efforts carried out in the agriculture sector, though successful, were also limited given the scale of operation. In the health and social sectors, capacity building was provided at national level in the border area. Information sharing aspects, however, could be improved across borders. Complaints were received in the environment sector, where the operation of the relatively new EOC as the secretariat of the WGE has caused concern. The work of the EOC has been slowed by having to route proposals through ADB based on ADB procedures, which may not be appropriate for relatively low-cost activities. Another main concern came from NGO partners in the BCI, who feel they have not been treated as partners. They perceive



a difference of emphasis between themselves (stressing the goal of biodiversity protection) and the EOC (stressing the goal of poverty reduction). Although the RETA document states that these goals have equal weight and are compatible, there is a perception of disagreement here that should be resolved (see environment working paper). Nonetheless, it is difficult to visualize how major multilateral agreements such as the CBTA could be negotiated without a comprehensive regional cooperation program for which ADB is playing an active catalytic role.

## 5. Portfolio Management

79. Management of the portfolio is rated “modest” on the grounds that there have been significant delays affecting many GMS projects across the various sectors (Appendix 1, paras. 5–8, 21–23). The fact that delays affected all types of projects, including TA, suggests that there may be a particular complexity in managing subregional projects. Not all delays may be under the control of project officers, but nonetheless this remains an issue to be addressed for the future and one that may be helped by the decentralization of project work to the resident missions. As the largest recipient of GMS funds, transport has seen the largest number of delayed projects. A majority of GMS transport projects have suffered from implementation delays as a result of a combination of factors. Slow startup has been a common problem, with significant implementation time lost on most projects due to delays in fulfilling conditions for loan effectiveness. Of the eight active transport loans that are effective to date, 75% were declared effective more than 90 days after signing. The average elapsed time from signing to loan effectiveness for these eight loans is over 6 months. Another factor is slow project implementation. Almost all completed projects have needed extensions of their closing dates due to implementation delays. Similarly, a number of mature ongoing projects either have been extended or are behind schedule and likely to need extension due to a number of factors, including preconstruction delays, inadequate equipment and unsatisfactory performance by contractors, and change or additions to project scope. Due to implementation delays, disbursements have also been slow in many cases.

The progress of loan disbursement appears to be partly successful compared with the elapsed time from loan approval which, in turn, affects the physical progress of projects (Appendix 1).

80. In summary, the overall top–down assessment is assigned “successful” (Table 8).

<b>Criterion</b>	<b>Overall Rating</b>
Strategic assessment	Substantial
Institutional assessment	Substantial
Value addition	Substantial
ADB performance	Substantial
Administration and internal coordination	Modest
Coordination with other agencies	High
Financial mobilization	High
Capacity building and technical support	Modest
Portfolio management	Modest
<b>Overall Top–Down Assessment</b>	<b>Successful</b>
Source: Operations Evaluation Mission.	

### III. GMS EVALUATION: BOTTOM–UP

81. The GMS-SF does not specify indicators to measure results, but the need to identify results indicators is discussed. The 2004 RCSP for GMS also does not indicate specific results indicators but gives examples of some indicators, such as traffic counts in transport corridors and the alignment of the national programs to reflect the regional dimension in economic corridors. Results frameworks were eventually incorporated in the GMS RCSP updates for 2006–2008 and 2007–2009. Of the GMS project count of 26 lending operations, about 81% of the projects have identified outcomes that concern regional cooperation, and 73% had identified related specific indicators of performance (Appendix 6, Table A6.1). These outcome indicators identify mainly target values (54%) either upon project completion or some years after completion. However, only 12% contain baseline values in the project documents. In the absence of baseline data and monitoring information, assessing the effectiveness, sustainability, and impact has been difficult. The regional cooperation assistance program evaluation used primary data from the project-specific sites and secondary data and descriptive information for the bottom–up assessment.

82. This section uses primary data collected for this study, as well as project completion reports (PCRs) and other secondary sources, to focus directly on the contributions made by GMS projects and other policy interventions. Given the heterogeneity of sectors, transport and trade facilitation, energy, tourism, environment, agriculture, and health and social sectors are discussed in turn with most attention given to the first two sectors where lending has been greatest. In addition, the effectiveness of training under the Phnom Penh Plan is also assessed, drawing on empirical work conducted for this study. Of the evaluation criteria identified in para. 6, relevance is not discussed, since it has been addressed already in paras. 34–44. Effectiveness and efficiency are addressed together, based on the results of detailed recalculations of economic analyses for transport and energy projects conducted for this study. A project is deemed both effective and efficient if it passes the appropriate economic test for acceptability. Sustainability is determined through this original project analysis and through a review of secondary sources. Impact addresses project effects that are not captured in the monetary calculations of the project economic analysis.

### A. Transport and Trade Facilitation

83. The objective of GMS road transport projects is to increase traffic flows both nationally and across borders and in this way stimulate economic activity. GMS road projects are largely road improvements with the objective of reducing vehicle operating cost (VOC) and travel time. There is direct evidence of time savings, which shows that this objective is being met. For example, on the Champasack Road Improvement Project in the Lao PDR, completed in July 2001, the average speed of vehicles before road improvement was estimated at 25 kilometers (km)/hour to 30 km/hour. After project completion, the average speed increased to about 50 km/hour with a 40–50% reduction in travel time. On the Northern Economic Corridor Project linking Boten on Lao PDR–PRC border with Houayxay on the Thailand–Lao PDR border completed in March 2008, the travel time from Houayxay to Boten was reduced from 18 hours in 2000 to 12 hours in 2006.<sup>60</sup> It is expected that, with the completion of the all-weather road, this could be further reduced to 6 hours.<sup>61</sup> Similarly, the Southern Yunnan Road Development Project completed the construction of the Yunnan–Yuanmo Expressway, which helped reduce the travel time between Kunming and Simao from 12 hours before the project to less than 6 hours.

84. Two case study road projects—the East–West Corridor linking Lao PDR and Viet Nam and the Phnom Penh–Ho Chi Minh City (HCMC) Highway linking Cambodia and Viet Nam—were examined in detail for this study (Appendix 5). Primary data on travel times collected for this analysis showing significant time savings are summarized in Table 9.

**Table 9: Travel Time on the Project Roads**

Project Road	Distance (km)	Average Travel Time (hours)	
		Before Project	After Project Completion
<b>East–West Corridor Project</b>			
From Kaysone Phomvihane to Dansavanh	236	10–12	4
From Dong Ha to Lao Bao	83	4	2
<b>Total</b>	<b>319</b>	<b>14–16</b>	<b>6</b>
<b>Phnom Penh–Ho Chi Minh City Highway Project</b>			
From Phnom Penh to Bavet	158	7	3
From Moc Bai to Ho Chi Minh City	80	4	2
<b>Total</b>	<b>238</b>	<b>11</b>	<b>5</b>

km = kilometer.

Source: Operations Evaluation Mission based on interviews with road users.

85. However, in general, traffic growth has been less than anticipated at appraisal. For the two case study road projects, three factors work to hold down traffic growth. First, there are still missing links in

<sup>60</sup> ADB consultant's report (Banomyong, Ruth. 2008. *Logistics Development Study of the North–South Economic Corridor*. Bangkok: Centre for Logistics Research. Final draft).

<sup>61</sup> PCR is awaited.

some GMS road networks. On the Phnom Penh–HCMC Highway, for example, the Cambodia component of the project road could not operate fully as an efficient and effective regional corridor due to the absence of a bridge on the Mekong River (thereby requiring the need for a ferry and the use of alternate routes), and the section between Phnom Penh and the Mekong River (at Neak Leoung) was still under major rehabilitation at evaluation.<sup>62</sup> For the Champasack Road Improvement Project in the Lao PDR, the main bottleneck was the absence of a 6.9 km link road on the border between Lao PDR and Cambodia at Veun Kham. This was completed in June 2008, about 7 years after project completion. On the Northern Economic Corridor Project, the absence of a bridge across the Mekong River at Houayxay, necessitating the use of a ferry, is an impediment to the growth of traffic.

86. Second, growth of international traffic on the case study roads has been restricted by the failure to fully implement the CBTA, which has delayed freight at border-crossing points. The surveys conducted for this study found that for the Phnom Penh–HCMC Highway, border-crossing time has indeed been reduced due to the pilot CBTA between Cambodia and Viet Nam and between Lao PDR and Viet Nam. Most significant is the reduction at the Dansavanh–Lao Bao crossing, which is reported to be now between 0.5 and 1 hour and was previously 1–2 hours. At Bavet–Moc Bai, however, although the time taken to process the documents is about 40 minutes, the overall border-crossing time is much higher, since trucks still cannot physically cross the border between Cambodia and Viet Nam, hence, the need to transship their goods. Average transshipment varies between 3 hours and 5 hours depending on the type of commodity. The position on the East–West Corridor is different, since there is a continuous uninterrupted link across the Lao PDR. Discussions with freight forwarders indicated that traffic from Thailand to Viet Nam along the corridor has grown, and both Thai and Vietnamese freight vehicles can travel in the Lao PDR owing to bilateral agreements. However, Thai vehicles are not allowed to cross into Viet Nam and vice versa. As a result, the Lao PDR is developing into a transshipment area, with the Lao companies acting as intermediaries between Thai and Vietnamese freight operators. Only with implementation of the CBTA is it expected that Thai trucks will be able to drive directly through the Lao PDR into Viet Nam. Although there has been a significant increase in cross-border traffic on both case study roads, international traffic still accounts for a minority of traffic and is well below its potential. Table 10 summarizes the findings from the traffic survey conducted for this study.

**Table 10: Distribution of National vis-à-vis International Traffic**

Country	Project	International Traffic (%)	National Traffic (%)	Total Number of Vehicles Surveyed in March 2008
Viet Nam	National Highway 9 (East–West Corridor)	26	74	2,067
	National Highway 22 (Phnom Penh–Ho Chi Minh Highway)	7	93	5,019
Cambodia	Route National 1 (Phnom Penh–Ho Chi Minh Highway)	20	80	2,367
Lao PDR	Route National 9 (East–West Corridor)	36	64	39,132 <sup>a</sup>

Lao PDR = Lao People's Democratic Republic.

<sup>a</sup> These figures are based on the records of a weigh station located on the East–West Corridor, based on surveys carried out by the Operations Evaluation Department's consultants in March 2008.

Source: Operations Evaluation Mission.

87. Third, as noted in para. 37, a significant weakness of the current stage of road transport development in the GMS is the failure to develop meaningful economic corridors with new infrastructure supporting economic activity along the roads. This, in turn, has contributed to slower-than-expected traffic growth. On the case study roads, there has been some new productive activity. On the Phnom Penh–HCMC Highway at Bavet in Cambodia, there is a special economic zone; and along the road (National Highway [NH] 22) from the border at Moc Bai to HCMC, an industrial estate has been established at Trang Bang. Similarly on the East–West Corridor, the Lao Bao Free Trade Zone operates on the Viet Nam side. However, it is difficult to identify the roads as growth poles, and induced productive activity has been slow to develop (Box 4).

<sup>62</sup> A new bridge is being designed now with financing from the Japan Bank for International Cooperation.

#### Box 4: Evaluation Findings Regarding the GMS East–West Economic Corridor

The East–West Economic Corridor (EWEC) seeks to improve the central corridor linking Da Nang in Viet Nam with Tak in Myanmar, spanning Viet Nam, Lao People’s Democratic Republic (Lao PDR), Thailand, and Myanmar. The completion of Loan 1727-LAO and Loan 1728-VIE meant that a substantial section of the EWEC has been completed. The resulting corridor from Dong Ha in Viet Nam to Kaysone Phomvihane in the Lao PDR provides an uninterrupted link across the Lao PDR. The Cross-Border Transport Agreement (CBTA) seeks to streamline regulations and reduce nonphysical barriers through more efficient inspection procedures and reciprocal traffic regulations. Formulated under a series of Asian Development Bank (ADB) technical assistance operations, Greater Mekong Subregion (GMS) countries ratified the CBTA in 2003, but, pending ratification of the implementation guidelines, it has not been enforced. However, pilot implementation of the CBTA was initiated (with ADB’s help) for the Lao Bao–Dansavanh segment of the EWEC under the memorandum of understanding on the initial implementation of the CBTA at the Dansavanh–Lao Bao border-crossing points between Lao PDR and Viet Nam in 2005.

**Travel time has been reduced dramatically.** After project completion, average vehicle speeds increased from 21.5 kilometers (km) per hour to 59 km/hour under the Lao PDR component, and from 20.8 km/hour to 41.5 km/hour under the Viet Nam component. Consequently, the average travel time from Kaysone Phomvihane to Dansavanh (under the Lao PDR component) has been reduced from 10–12 hours to 4 hours, while that from Dong Ha to Lao Bao (under the Viet Nam component) was reduced from 4 hours to 2 hours.

**Vehicular traffic crossing the Lao Bao–Dansavanh border has been slow to grow.** This is despite improvements to road and border facilities and existing bilateral agreements. Customs data in Viet Nam indicate that an average of 150 vehicles crossed the border daily during 2004–2007, representing a 30% increase from the 115 vehicles per day crossing during 1998–2000. This is below potential, considering that the Viet Nam project’s design forecast the car and bus volume to reach 293 per day by 2010. It is expected that, with full implementation of the CBTA, this statistic will improve.

**Border clearance time has improved dramatically on both sides.** The processing time of declarations and inspections by the border agency in Lao Bao was reduced from an average of 125 minutes before the project to 29 minutes for outbound goods, and from 20 minutes before the project down to 12 minutes for inbound goods. Similar dramatic reductions were noted in the processing time of the border agency in Dansavanh from the average time of 25 minutes before the project to 17 minutes for outbound goods, and from 103 minutes before the project to 31 minutes for inbound goods.

**More than two thirds of EWEC traffic is still national.** While the overall level of traffic along the project road in the Lao PDR is lower than that in Viet Nam, it has a relatively higher proportion of international traffic. However, the Lao PDR cargo traffic is mostly inbound, thus highlighting the need to promote exports. Improving connectivity will involve more complementary investments besides capacity development. On the Viet Nam side, industrial estates were developed in Lao Bao and Dong Ha in 2002–2003, and more are being planned in Cam Lo and Dak Rong districts and Cua Viet port. Local officials cited the improvement of the project roads as a key factor in attracting such development.

**Net economic benefits from the EWEC have been distributed almost equitably between Lao PDR and Viet Nam.** The country-level distribution of benefits is almost on par, with Viet Nam benefiting slightly more than the Lao PDR. This equal distribution of economic benefits between the two countries reinforces the regional cooperation aspect of the two projects. At the household level, the depth of project impact has varied with each household’s access to productive resources and the adoption of appropriate technology.

**Total trade has not increased as expected.** Following low volumes during the construction years, the share of trade through Dansavanh to total trade of the Lao PDR has gradually picked up from about 2% in 2002–2003 to around 4.5%–4.9% in 2006–2007.

**Growth in the services sector was substantial.** Owing to the ample capacity of border facilities at Mukdahan–Kaysone Phomvihane and Dansavanh–Lao Bao to process passenger formalities efficiently, people traffic doubled or even tripled since project completion from around 95,000 in 2000–2001 to almost 184,000 in 2006 and 274,000 in 2007.

**A key corridor-level benefit has been improved access to markets and basic social services.** EWEC transport facilitation further opened up markets and enabled consumer choices through cheaper prices, product availability, and diversity. For instance, Dansavanh villagers can go on night shopping at the Lao Bao market or opt to use a Viet Nam hospital for more serious illnesses.

**The risks of trafficking (human and wildlife) and logging were highlighted.** However, enforcement is still made difficult by porous borders, a lack of trained and qualified staff and funds, cultural practices, and the profitable nature of trafficking in both humans and wildlife. In the case of cross-border movement of logs, the Lao PDR exports of wood products quieted down owing to stricter enforcement policies.

Source: ADB. 2008. *Project Performance Evaluation Report for the Lao People’s Democratic Republic and Socialist Republic of Viet Nam: Greater Mekong Subregion: East–West Corridor Project*. Manila.

## 1. Effectiveness and Efficiency: Project Economic Analysis Recalculations

88. These are rated “effective” and “efficient.” The economic internal rate of return (EIRR) and economic net present value (NPV) of the case study projects were recalculated, taking into account changes since the original appraisal. For example, capital costs and traffic flows have been adjusted to actual figures, and constant 2008 prices are applied. The test used here of whether there is genuine additionality from the GMS cooperation is that (i) a project is economically efficient (with a recalculated EIRR above the appropriate cost of capital), and (ii) a project would not have been implemented in its current form without the GMS program. These conditions also provide a check on whether a project meets the evaluation tests of being effective and efficient. Under (i), a strict application of the test means that the EIRR should be compared with the opportunity cost of capital in the respective member countries. However, in the absence of such estimates, the standard ADB cutoff rate of 12% can be applied. Under (ii), it is clear that without the GMS program, the road projects would not have been implemented with their cross-border components, even if the CBTA were still not fully implemented. The recalculations used the standard software applied in road appraisal: Highway Development Management-4 and Road Economics Decision (Appendix 5). These set benefits as savings in VOCs, although this approach allows induced production activity to be captured through estimates of generated traffic. The surveys conducted for the study allowed a reestimation of traffic flows along both roads.

89. At appraisal, the two road projects were assessed to be highly economically justifiable, with EIRRs ranging<sup>63</sup> from 16% to 34%. The PCRs of the two projects, completed in 2007, confirmed the results of the appraisal, with EIRRs at completion ranging<sup>64</sup> from 18% to 29%. However, the assumptions used by the PCRs are debatable, since the increase in the EIRRs could be attributed to a different choice of location for traffic surveys.<sup>65</sup> To the extent possible, the assessment of traffic as part of this study was conducted at locations that are representative of the average traffic on the entire project road, capturing national as well as international traffic. The recalculation of the economic analysis here found that all but the Viet Nam component of the East–West Corridor (National Road 9) had EIRRs around the threshold of 12%, in the range of 11%–13%, implying only marginal benefits (Table 11). One reason for the lower EIRRs as compared with those at appraisal is the fact that traffic has not grown as fast as expected in Viet Nam. In addition, the reestimated VOC savings derived as part of this study using 2007/08 prices and revised indexes of road roughness are considerably lower than those used in the PCR (Table A5.8). The results here are based on the assumption that traffic will pick up shortly after the CBTA is fully implemented, and the long-run growth rates for traffic applied from 2009 onward are largely the same as those in the original appraisal. In Viet Nam, these similar growth rates are applied to a much lower traffic base than in the PCR, so that here the long-run traffic forecast for Viet Nam is well below that in the PCR. As they stand, these recalculations imply that, apart from some sections on the Viet Nam side where traffic flow is higher, these are only marginal projects. However, the results are dependent on the estimates of fuel cost used and have been assumed to have long-run oil price in 2007/08 of \$80 per barrel. There is clearly considerable uncertainty here, and if the long-run constant price over the life of the roads is higher than this, it will increase the fuel saving benefits and boost the EIRRs or vice versa. Under circumstances of uncertainty in the oil market, given the fuel savings inherent in these road projects, even the 11% EIRR for the NH22 road can be judged acceptable.

<sup>63</sup> For Phnom Penh–HCMC Highway Project, RN1 (Cambodia) was 22%; NH22 (Viet Nam), 18%; and NH1A (Viet Nam), 34%. For the East–West Economic Corridor, RN9 (Lao PDR) was 16–19%; and NH9 (Viet Nam), 16–23%.

<sup>64</sup> For Phnom Penh–HCMC Highway Project, RN1 (Cambodia) was now 24.1%; NH22 (Viet Nam), 25.4%; and NH1A (Viet Nam) 28.7%. For the East–West Economic Corridor, RN9 (Lao PDR) was 20.6%; and NH9 (Viet Nam), 17.6%.

<sup>65</sup> Locations of traffic surveys in the PCRs are not clearly identified and, therefore, the assumption could be optimistic.

**Table 11: Summary of EIRRs**

<b>Project</b>	<b>Project Component</b>	<b>EIRR at Appraisal (in 1998/1999) (%)</b>	<b>EIRR at Completion (in 2005) (%)<sup>a</sup></b>	<b>Recalculated EIRR (in 2008) (%)</b>
Phnom Penh–Ho Chi Minh Highway	NH1A (Thu Duc to Hoc Mon) Viet Nam	34	28.7	(2) <sup>b</sup>
	NH22 (Hoc Mon to Moc Bai) Viet Nam	18	25.4	11
East–West Corridor	RN1 (Mekong River ferry to Bavet) Cambodia	22	24.1	12
	RN9 Phin–Dansavanh (Lao PDR)	16	20.6	13
	NH9 Lao Bao Dong Ha (Viet Nam)	16	17.6	16

EIRR = economic internal rate of return, Lao PDR = Lao People's Democratic Republic, NH = national highway, RN = route national.

<sup>a</sup> The project completion reports were completed in 2007, but the traffic data were collected in 2005.

<sup>b</sup> NH1A is a relatively short section (approximately 22 kilometers). Being basically urban, traffic is high on NH1A near the Ho Chi Minh City but varies widely as one moves away from the city. Comparison with past numbers is difficult, since the exact locations of past traffic counts is not known. As a result, different locations in this type of urban road may bring large fluctuations in traffic. The more important reason for the negative figure is that the NH1A section incurred a large construction cost to expand the road carriageway from 6 meters to 28 meters or from 2 lanes to 6 lanes. The road roughness was low (at 3.5) before the project. As a result, the incremental vehicle operating cost savings (ignoring time savings) were not significant after road improvement.

Source: Operations Evaluation Mission.

90. The recalculations have also distributed costs and benefits between the participating countries, taking account of estimated national and international traffic and their respective investments (Tables 12 and 13).

**Table 12: Benefit Distribution of Phnom Penh–Ho Chi Minh City Highway Project**

<b>Item</b>	<b>Total Project (\$ million)</b>	<b>Cambodia RN1 (\$ million)</b>	<b>Viet Nam NH22 (\$ million)</b>
Discounted economic cost	55.83	23.35	32.48
Discounted economic benefits	52.39	23.24	29.15
Net economic benefits	(3.44)	(0.11)	(3.33)
B/C	0.94	1.00	0.90
EIRR	11%	12%	11%

B/C = benefit/cost ratio, EIRR = economic internal rate of return, NH = national highway, RN = route national.

Source: Operations Evaluation Mission.

**Table 13: Benefit Distribution of the East–West Corridor**

<b>Item</b>	<b>Total Project (\$ million)</b>	<b>Lao PDR RN9 (\$ million)</b>	<b>Viet Nam NH9 (\$ million)</b>
Discounted economic cost	29.11	15.43	13.68
Discounted economic benefits	36.68	16.99	19.70
Net economic benefits	7.58	1.56	6.02
B/C	1.26	1.10	1.44
EIRR	15%	13%	16%

B/C = benefit/cost ratio, EIRR = economic internal rate of return, Lao PDR = Lao People's Democratic Republic, NH = national highway, RN = route national.

Source: Operations Evaluation Mission.

91. For the Phnom Penh–HCMC Highway, assuming 12% to represent the opportunity cost of capital, Cambodia breaks even (there is a very low negative net benefit), while Viet Nam loses \$3 million from the project. For the East–West Corridor, the Lao PDR has a very small gain, while Viet Nam takes 80% of the gains and meets just under 50% of the costs. This is reflected in its higher EIRR of 16% as compared with 13% for the Lao PDR. Hence, there is evidence of an unequal distribution of net benefits.

92. The recalculations do not have an accurate breakdown of the benefits within the countries. However, household surveys were undertaken in the border areas as part of the study. In the Lao PDR interviews, farmers living along the East–West Corridor claimed that their income had risen by 20% and that they were getting on average a 20–30% better price for their production. Similarly in Viet Nam, along the East–West Corridor, more than 80% of households interviewed perceived an increase in production, selling volume, and income after road completion. However, the incremental impact on Vietnamese farmers along the Phnom Penh–HCMC Highway had been marginal. In Cambodia, all respondents said that their living conditions had improved after road completion and that more job opportunities were available. The survey also noted that better road conditions facilitate access to health services. Before the road improvement, households made an average of 2.7 trips per month to health centers, but after road improvement, the number rose to 4.7 trips per month. These perception are not incompatible with the results in the tables, since the latter do not imply that incomes will not rise, only that they have either not risen as much as, or have risen only marginally more than they would have done if the investment in the roads had gone to other types of projects with a 12% return.

93. From the perspective of the economic analysis recalculations, the effectiveness and efficiency of these case-study road projects is relatively low and less than expected at appraisal, given the recalculated EIRRs. However, they do allow fuel savings, which is a benefit that is difficult to value at this time of uncertainty in the oil market.

## 2. Sustainability

94. The key issue for sustainability in road projects is adequate maintenance. Rehabilitated project roads will require major resurfacing on a 6–7 year cycle. Resurfacing is expensive, and there are doubts that required budgets will be readily available for all the newly rehabilitated roads. Apart from the PRC, where this is not a problem, the budget figures received from the ministries of transport of the GMS countries indicate that the current levels of allocation are lower than requirements, although there has been an effort to increase these in the recent years. Viet Nam has spent the equivalent of \$1,300/km/year for routine maintenance on the East–West Corridor, though the expressed requirement was for \$1,875/km/year. In the Lao PDR, the 2008–2010 maintenance budget allocated \$900/km/year for the same corridor. Cambodia spends around \$1,500/km/year for routine maintenance. Hence, there is a gap to be filled.

95. In the Lao PDR, the government has set up a road fund, which receives revenues from the fuel tax as well as external funding. Viet Nam has been debating the use of a road fund for several years. ADB initiated a road information management system as part of the Third Road Improvement Project in Viet Nam. Subsequently, the World Bank and the Japan Bank for International Cooperation have provided funding to continue the application of this system, as well as to focus on maintenance activities. Hence, it is reasonable to anticipate that there will be a phased stepping up of the financing of road maintenance in Viet Nam. Despite the increase in budgetary allocations in Cambodia, maintenance continues to be a major issue that has yet to be resolved in a manner similar to the Lao PDR. Overall, concern on sustainability remains but is tempered by the fact that the GMS countries are making efforts to improve this situation. In view of this, the rating is “likely to be sustainable.”

## 3. Impact

96. Overall impact assessment is “substantial.” Road rehabilitation had a definite positive impact on the communities living along the roads. In Cambodia and Lao PDR, life in the border communities has changed for the better. Households have taken opportunities to become traders and are crossing borders more frequently<sup>66</sup> than they used to. In the Lao PDR, farmers living along the East–West Corridor claimed in interviews that their income had risen by 20% and that they were getting on

<sup>66</sup> In the Lao PDR, the survey found that 70% of households interviewed were crossing the border more than five times a month.

average 20%–30% better prices for their production. One reason for this could be that NH22 was previously in a good condition, and the road improvement provided only small incremental benefits.

97. Bus fares along NH1A and NH22 in Viet Nam are reported to have been reduced. There were benefits on most routes for bus passengers and taxi/van passengers. Fare reductions varied between 4% and 14% for bus passengers, and were 4%–8% for taxi/van passengers. More specifically, the bus fare was reduced by 6.5% for Phnom Penh–HCMC Highway and by 14% for Phnom Penh–Svay Rieng at project completion in 2005. Correspondingly, the VOC savings increased by 6.37% in 2005 and 5% in 2006. Transport cost reductions have then been passed to consumers. In a different perspective, vegetables originating from the project road area and sold in Phnom Penh market have benefited from cost reductions,<sup>67</sup> which could be attributed to transport cost reductions.

98. As noted in para. 30, trade in the region has grown, although the CBTA is not yet fully implemented (Box 5) and is still likely to be below its potential. This has been picked up in the economic calculations through the use of VOC savings as a proxy for benefits from induced trade.

#### **Box 5: Cross-Border Transport Agreement**

1. Lao PDR, Thailand, and Viet Nam signed the original CBTA in 1999. The signing of Cambodia, PRC, and Myanmar followed in 2001–2003 such that, by 2003, all GMS countries had signed it. However, ratification of the annexes and protocols was still pending at that time. Moreover, the CBTA was amended in April 2004 to reflect country revisions.
2. As an interim measure, the GMS countries agreed in 2004 to pilot the CBTA at seven key border-crossing points. While the memoranda of understanding (MOUs) had been signed for five border-crossing points (Lao Bao–Dansavanh, Poipet–Aranyaprathet, Mukdahan–Kaysone Phomvihane, Bavet–Moc Bai, and Hekou–Lao Cai), actual pilot implementation has so far been carried out in only three: at the Lao Bao–Dansavanh, Mukdahan–Kaysone Phomvihane and Hekou–Lao Cai border-crossing points.
3. The GMS countries signed the last 3 of 17 annexes and the remaining protocol out of three protocols in March 2007. The PRC and the Lao PDR were the first countries to ratify all annexes and protocols in January 2008. As of October 2008, Thailand, Myanmar, and Viet Nam have not yet fully ratified all the annexes and protocols. Full implementation of the CBTA is expected in 2010.<sup>a</sup>
4. The GMS customs transit system (Annex 6 the of CBTA) has been finalized by all GMS countries, and the MOU for the pilot implementation of the harmonized customs transit in the East–West Corridor is scheduled for signing in 2009. The customs transit system proposes to exempt from the payment of customs duties and escorts, cargoes, vehicles, and containers in international and inland transit.

CBTA = Cross-Border Transport Agreement, GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China.

<sup>a</sup> ADB. 2008. *Project Performance Evaluation Report: Lao People's Democratic Republic and Socialist Republic of Viet Nam: Greater Mekong Subregion: East–West Corridor Project*. Manila.

Sources: Asian Development Bank's Southeast Asia Department and various GMS weblinks.

99. In terms of socioeconomic impact, the project performance evaluation report for the East–West Economic Corridor reveals an expansion of the border villages and increased incomes of households living there, owing to greater production and, to a lesser extent, greater sales (owing to competition with cheaper products from PRC and Viet Nam) after completion of the roads. Large-scale farmers, cross-border traders, and service providers were found to have experienced the highest increases in production, sales, and incomes. Improved access to markets has helped form surplus areas of production (resulting in diversification of production to other crops, and increased production beyond the consumption needs of local residents) and has enabled greater consumer choices (through cheaper prices and greater product availability and diversity).

100. However, there will be some effects that cannot be quantified in monetary terms and incorporated in project economic analysis. Several such issues have arisen in relation to potential negative social and environmental effects from GMS road projects. The GMS Transport Sector

<sup>67</sup> For instance, price of 1 kilogram of tomato is now \$0.45 in Bavet and \$0.5 in Phnom Penh, while before it was \$0.37 and \$0.20, respectively. Tomatoes originate from Viet Nam. The reduction of the gap between Phnom Penh and Bavet market is a measure of the saving in transport cost largely passed to consumers.



Strategy, 2006–2015 is silent on how to handle such issues, which are normally dealt with at the project level.

101. **Environment.** There are several direct and indirect impacts on the environment along the completed and ongoing corridors as summarized below:

- (i) Upgrading of roads has facilitated illegal logging in the Lao PDR. Deforestation has been caused mainly by the new demand from PRC, Thailand, and Viet Nam for hardwood logs and lumber, although its volume is difficult to determine.<sup>68</sup>
- (ii) Transportation and increased cross-border trade have led to an increase in illegal wildlife trade in the GMS. A study found that 43 species of live wildlife have been traded across the border of PRC and Viet Nam.<sup>69</sup>
- (iii) Deforestation in the GMS is caused by high agricultural and timber prices, road construction, and incentives offered for agriculture. The clearance of land for agriculture adjacent to the improved roads is common across the GMS.<sup>70</sup>
- (iv) Watershed damage and increased soil erosion has been attributed to the construction of road and railway projects in the GMS.

102. **Resettlement.** Resettlement became an issue in Cambodia with the rehabilitation of RN1 from the ferry at Neak Leoung to the border at Bavet.<sup>71</sup> With NGO support, over 100 affected persons have claimed that they did not receive the compensation that was promised. This situation is in the process of being resolved, although the project was completed in 2005. Similarly, on completion of the Southern Yunnan road in the PRC, it was found that ethnic minorities were adversely affected by land acquisition and resettlement. Compensation of affected persons is a government responsibility. However, because of its role in supervision and monitoring, ADB bears some responsibility for not being able to properly mitigate such occurrences. Although these instances could be perceived as unrepresentative of GMS projects, the program needs to stress the importance of appropriate resettlement in all cases.

103. **Road Safety.** This emerged as a key topic during discussions with local villagers, who perceived a significant increase in the risk of accidents due to higher vehicle speed with the improvement of roads.<sup>72</sup> Safety should be addressed at the formulation stage by including additional signage and pavement markings in road design and construction. Although most of the GMS countries have appropriate legislation that addresses road safety, it is rarely enforced. It has been estimated that road accidents create a significant economic cost in the GMS (Table 14).

**Table 14: Annual Economic Losses due to Road Accidents in GMS Countries**

Country	\$ Million	% of GDP
Cambodia	116	3.21
Lao PDR	47	2.70
Thailand	3,000	2.10
Viet Nam	885	2.45

ADB = Asian Development Bank, ASEAN = Association of Southeast Asian Nations, GDP = gross domestic product, GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.

Source: ADB–ASEAN. 2005. Arrive Alive ASEAN Commits to Cutting Road Deaths. *Association of Southeast Asian Nations Regional Road Safety Strategy and Action Plan (2005–2010)*. Manila.

<sup>68</sup> United Nations Development Programme. 2006. *National Human Development Report International Trade and Human Development*. Vientiane.

<sup>69</sup> Yiming, Li, and Li Dianmo. 1996. *The Investigation on Wildlife Trade Across Guangxi Borders between China and Viet Nam*. In: *Conserving China's Biodiversity* (John Mackinnon, Wang Sung, eds.). China Environmental Science Press. Beijing.

<sup>70</sup> On the Champasack Road Improvement Project (Loan 1369) in the Lao PDR, the forest area between Ban Seng Village and Ban Pao Village was cleared using slash-and-burn techniques, because the soil in this area is fertile for growing rice.

<sup>71</sup> The location of the resettlement has been reported to be Kampong Soeung Village in Cambodia on the Phnom Penh–HCMC Highway.

<sup>72</sup> The Lao PDR's local transport department in Champasack Province estimated a 71% increase in the number of accidents since project completion in 2001.

104. **HIV/AIDS.** A recent study carried out under ADB-administered TA shows that increased transport activity and mobility actually increase opportunities for risky behavior and thus may facilitate the spread of HIV/AIDS along road corridors. This is the case in particular for cross-border transport corridors, and adequate measures need to be taken to mitigate these risks. New cases of HIV infections have been diagnosed and identified in the border district of Luang Namtha among young ethnic women. The increase in the number of roadside businesses and restaurants is a positive economic impact attributed to the improvement of the Northern Economic Corridor in the Lao PDR. However, there has been a corresponding rise in the alcohol trade and human trafficking along the corridor. This is closely linked with the spread of communicable diseases.<sup>73</sup> ADB has initiated several programs to tackle HIV/AIDS (see HRD background paper).

105. **Land Grabbing.** In northern Lao PDR, there has been an increase in rubber plantations in the vicinity of the Northern Economic Corridor. With the increase in demand for rubber caused by the growth of the Chinese automobile industry, business-persons from the PRC are alleged to have turned communal land into private land, using local entrepreneurs.

106. Of particular concern is the failure to integrate environmental policy more closely with road project planning (para. 62). ADB has procedures and mechanisms to address issues relating to environmental impact, resettlement, road safety, and disease control that, if followed carefully, should be adequate to mitigate most direct project effects. In relation to GMS road projects, there are individual concerns regarding unmitigated effects (principally in relation to the resettlement case in Cambodia on RN1 as part of the Phnom Penh–HCMC Highway Project).

## B. Energy

107. GMS energy projects are a key mechanism for implementation of the power trade of the GMS program. Four loans and 16 TA grants amounting to \$196.4 million<sup>74</sup> of GMS resources have been involved in energy. Two completed projects allow the export of power from Lao PDR to Thailand; and of the two ongoing projects, one is a transmission project to allow export from Viet Nam to Cambodia, and the other is another hydropower export project to Thailand. The two completed projects, the Theun–Hinboun and Nam Leuk hydropower projects, have achieved most of their objectives. The exception relates to Nam Leuk's reported failure to strengthen the management and protection of the Phou Khao Khouay Park National Biodiversity Conservation Area and the capacity of Electricité du Laos (EdL), the electricity authority of the Lao PDR. Little was accomplished on capacity building in EdL, mainly due to lack of preparation at the design stage and of monitoring during implementation.<sup>75</sup>

108. The two ongoing loan projects—the GMS Transmission Project in Cambodia and the Nam Theun 2 Hydroelectric Project in the Lao PDR—are reportedly progressing satisfactorily. The GMS Transmission Project involves construction of a transmission line, associated substations, and distribution facilities from the Vietnamese border to Phnom Penh, which will allow Cambodia to import up to 200 megawatts from Viet Nam. Although this project experienced initial implementation delays due to the installation of a new Cambodian government and the consequent slow fielding of consultants (Appendix 1, para. 7), its institutional, administrative, and organizational setup was found satisfactory and functioning well. The transmission line on the Vietnamese border side is complete, while that on the Cambodian side is under construction. Meanwhile, Nam Theun 2 includes the development, construction, and operation of a 1,070-megawatt transbasin diversion power plant on

<sup>73</sup> Lyttleton, C. 2008. *Build It and They Will Come: Lessons for Mitigating Exploitation, HIV, and Other Diseases from the Construction of Lao Route 3*. ADB Study Series. HIV and Infrastructure in the GMS - Technical Report Number 2. Manila: ADB (draft).

<sup>74</sup> Includes only ADB and related cofinancing amounts.

<sup>75</sup> ADB. 2004. *Project Performance Audit Report on the Nam Leuk Hydropower Project*. Manila.

the Nam Theun River. Construction of infrastructure facilities has progressed satisfactorily, and there is reported to be good progress on resettlement of those affected.

109. Eleven of the 16 TA grants provided so far to the GMS energy sector have been completed, of which 7 were PPTA, 3 were advisory TA, and 1 was a core TA. These completed TA operations were successful in preparing the groundwork for the programs and projects that followed and generally supported the development of subregional trade in power. Most of the PPTA grants led to loan projects. The TA on the Subregional Electric Power Forum led to the establishment of an experts' group for promoting cross-border trade and developing a regional power grid.

### 1. Effectiveness and Efficiency: Project Economic Analysis Recalculations

110. The two completed energy sector projects, Theun–Hinboun and Nam Leuk, were taken as case studies, and their EIRRs and economic NPVs were recalculated, taking into account changes since the original appraisal. All price data were converted to 2008 prices, and actual capital cost figures in 2008 prices were used. As in the transport analysis, the test of whether there has been genuine additionality from the GMS cooperation depends on whether (i) a project is economically efficient (with a recalculated EIRR above the appropriate cost of capital), and (ii) the project would not have been implemented in its current form without the GMS program. Under (i), the ADB test discount rate of 12% is used as a proxy for the opportunity cost of capital in the respective member countries. The judgment under (ii) is that, while power export could have taken place bilaterally between Lao PDR and Thailand without the GMS links, ADB intervention under the GMS program to guarantee the public–private partnership that was pioneered in the Theun–Hinboun Project was critical to the project's implementation. Given the high risk attached to investment in the Lao PDR in the 1990s, it is unlikely that private funding on this scale could have been attracted without the public–private partnership. Similarly, it can be argued that the Nam Leuk Project would not have gone ahead without the successful example of Theun–Hinboun. Hence, condition (ii) can plausibly be met by both projects. Table 15 summarizes the recalculated EIRRs for the projects (Appendix 5).

**Table 15: Comparative EIRRs of Completed Energy Projects**

Item	RRP	PCR	PPER	Recalculation
Theun–Hinboun Hydropower	23.6	30.8	18.5	32.0
Nam Leuk Hydropower	13.5	10.4	11.8	9.7

EIRR = economic internal rate of return, PCR = project completion report, PPER = project performance evaluation report, RRP = report and recommendation of the President.

Source: Operations Evaluation Mission.

111. Theun–Hinboun is a strongly attractive project with a high EIRR for the subregion as a whole and for both Lao PDR and Thailand. The complex funding structure means that gains also flow outside the region to the external investors. Allowing for these benefits that accrue to the Lao PDR are the dividends paid to EdL, government's collection of tax starting in 2003, and royalties and incremental benefits from the domestic sales of power. While a major portion of power produced by the project is exported to Thailand, the small portion that is sold to EdL has allowed for the electrification of some villages. The benefits that accrue to Thailand include the dividends paid to the Thailand-based foreign company and the availability of lower cost power measured as the difference of the negotiated export price and the cost of production of thermal power in Thailand. Table 16 summarizes the net economic benefits for the participating countries under different scenarios.

**Table 16: Economic Benefit Distribution of Theun–Hinboun Hydropower Project**

Item	Gain to Subregion	Gain to Lao PDR	Gain to Thailand
Net present value (\$ million, at 12%)	163.0	103.1	59.9
Internal rate of return (%)	32.0	28.2	39.4

Lao PDR = Lao People's Democratic Republic.

Source: Operations Evaluation Mission.

112. The Nam Leuk Hydropower Project, however, generates only a marginal EIRR that is below the 12% test rate (Table 17). Although there is a small export of surplus power to Thailand, the bulk of sales are in the domestic market. The economic value of such domestic sales is taken as the marginal import cost from Thailand, since the Lao PDR becomes an importer during the dry season when there is a water shortage. At this price, the economic returns are relatively low. However, the analysis assumes a constant real value for electricity after 2008, and any rise in the relative cost of electricity will improve them. Hence, these marginal returns reflect a pessimistic scenario and may well understate national and subregional benefits.

**Table 17: Economic Benefit Distribution of Nam Leuk Hydropower Project**

Appraisal	PCR	PPER	EIRR Recalculations	
			Lao PDR	Subregion
13.5	10.4	11.8	8.6	9.7

EIRR = economic internal rate of return, Lao PDR = Lao People's Democratic Republic, PCR = project completion report, PPER = project performance evaluation report.

Source: Operations Evaluation Mission.

113. On the effectiveness and efficiency criteria, the ratings are “effective” and “efficient,” given the high economic returns to Theun–Hinboun and the marginal (probably underestimated) returns to Nam Leuk.

## 2. Sustainability

114. The key to the sustainability of commercial projects is financial viability. This is tested by recalculating the financial internal rates of return (FIRRs) of the projects and comparing them with the weighted cost of capital. For Theun–Hinboun, the power purchasing agreement between the Theun–Hinboun Power Company Limited and the Electricity Generating Authority of Thailand based on the take-or-pay principle has a term of 25 years (up to 2023) with an option for tariff negotiations. This agreement ensures the project's financial stability and sustainability even without any tariff renegotiation. The recalculated FIRR is 21.7%, which is well above the weighted average cost of capital. The high return to the project is due principally to a guaranteed long-run export price and access to relatively low cost of loans to cover EdL's equity contribution. Theun–Hinboun is also physically sustainable, provided preventive maintenance is continued.

115. For the Nam Leuk Project, sustainability depends partly on EdL's effectiveness in operation and maintenance and partly on domestic electricity tariffs. The recalculated FIRR for Nam Leuk is 4.3%, which is just about equal to the weighted average cost of capital for the project. Provided adequate tariff adjustments are made to allow for cost escalation, financial viability should be maintained. On the other hand, the continued protection of the Phou Khao Khouay Park Biodiversity Conservation area, which hosts the Nam Leuk Project, is likely unsustainable unless its management is strengthened (footnote 75).

116. Of the ongoing projects, the main risk for the power transmission project from Viet Nam to Cambodia is the commitment of both parties to a power purchasing agreement. However, a recent review concluded that Cambodia is committed to importing power from Viet Nam and that both

countries have taken the necessary actions to make the power purchasing agreement effective.<sup>76</sup> For the Nam Theun 2 Hydroelectric Project, social and environmental impacts had been a source of controversy. To ensure that project commitments are complied with, the company has entered into a legal contract with the government through the concession agreement for the mitigation, compensation, and rehabilitation of project-affected people. A performance monitoring system was set up to assess progress in minimizing negative impacts.

117. Overall, the rating for sustainability in the sector is “likely,” even though there are elements of risk. This is based on the evidence of the two case study projects and recent assessment of the two ongoing projects.

### 3. Impact

118. As yet, power trade within the GMS is limited, but power exports from the Lao PDR are now significant in macro terms for the country itself, being around 5–6% of GDP (Box 6). The expansion of hydropower and the increased availability of electricity in the domestic market has also allowed the spread of rural electrification. Furthermore, exports have provided Thailand with an environmentally cleaner source of power as a replacement for thermal capacity. Although currently these imports provide only a small share of supply in Thailand (1% in 2008), this is projected to increase to nearly 10% by 2021.<sup>77</sup> Nonetheless, evidence from the GMS hydropower projects indicate that there have been difficulties in implementing social and environmental mitigation measures. There is a need to enhance the institutional and policy frameworks of member countries to ensure that environmental and social costs in energy systems remain reasonable. The working paper on environment did acknowledge the positive outcomes of the pilot study strategic environmental assessment on hydropower in Viet Nam, but emphasized the need to adopt one for hydropower in Lao PDR, given its desired positioning as the “Battery of Southeast Asia.”

#### Box 6: Evaluation Findings Regarding Power Trade

1. There is potential for electricity trade in the Greater Mekong Subregion (GMS), because Thailand and Cambodia are net importers of electricity, while the Lao People’s Democratic Republic (Lao PDR) is a net exporter. Power trade in the GMS started in 1971 when the Lao PDR and Thailand entered into a power purchasing agreement involving export from the Nam Ngum hydropower plant to northeast Thailand. From 1990 onward, various memoranda of understanding were signed, including the 1995 agreement between Lao PDR and Viet Nam (for power sale of 1,500–2,000 megawatts [MW] by 2010) and the 2008 agreement between Lao PDR and Thailand (for power sale of up to 7,000 MW).
2. These bilateral but one-way trade arrangements have generated benefits to the parties involved, but economic benefits have so far been more favorable to the Lao PDR. The country’s power exports were the largest foreign exchange source in the Lao PDR in 2002, and its electricity production has been a major contributor to its gross domestic product (GDP). Its exports of electricity as a percentage of GDP quadrupled from 1.6% in 1994 (with the construction of the Theun–Hinboun plant) to 6.5% in 1998 (with the construction of the Nam Leuk plant) but tapered to 3.5% in 2005. Complementarily, such power trade provides Thailand access to clean and low-cost energy sources needed to support its growing economy. In 2007, electricity imports supplied 1.4% of Thailand’s power requirements, and this is expected to increase to 8.5% by 2021. Although the hydropower plants were built primarily for export purposes (according to the 2002 project performance evaluation report [PPER] for Theun–Hinboun, 95–98% of the electricity generated has been exported to the Electricity Generating Authority of Thailand since March 1998), they have also benefited rural communities in both countries with increased electrification, employment, and infrastructure development (e.g., the construction and improvement of roads leading to the project site have increased people’s mobility and access to opportunities for commercial activities).
3. Regional power interconnections in the GMS are made via medium-voltage transmission lines. At present, the only high-voltage cross-border transmission line within the GMS is the line from the Nam Theun 2 hydropower plant in Lao PDR to Thailand, although work on the first high-voltage transmission line between Cambodia, Lao PDR, Viet Nam, and several other cross-border initiatives is ongoing. Interconnecting disparate power systems is one of the challenges faced by the GMS.

<sup>76</sup> Source: Back-to-office report of Review Mission conducted by the Cambodia Resident Mission on 11–18 March 2008.

<sup>77</sup> Electricity Generating Authority of Thailand. 2007. *Thailand Power Development Plan (PDP 2007)*. Bangkok.

4. The Asian Development Bank (ADB) developed the policy framework (including the methodology for evaluating private sector proposals) for the Theun–Hinboun Project. Thus, the government and Electricité du Laos (EdL) benefited from the preparation and negotiation of the license agreement and power purchasing agreement, which they applied in processing the agreements for subsequent projects like the Houay–Ho and Nam Theun 2 hydropower plants. The creation of a public–private company, the Theun–Hinboun Power Company Limited, has also provided EdL with experience in working with private sector partners. The project can also serve as a model for effectively combining multilateral and bilateral aid. In both these areas, the project provides a demonstration effect, both within the subregion and internationally. There is clear evidence that investor confidence in undertaking power export projects in the region has risen strongly in recent years, as evidenced by the pipeline of several hydropower projects in the Lao PDR for private sector finance. Other success factors that can also be replicated are (i) thorough technical and economic evaluation of a suitable hydropower site, (ii) choice of a group of developers that has the necessary financial and technical experience, (iii) negotiation of a power purchasing agreement that is advantageous to all parties involved, and (iv) the willingness to learn from mistakes made and to take responsibility for mitigating them.

5. There have been negative effects as well. For instance, the PPER for Theun–Hinboun reported negative environmental and social impacts, which were exacerbated by the lack of a resettlement plan (physical relocation of persons was not anticipated) and a weak environmental mitigation program (increased erosion and sediment loads, which reduced downstream flows on the Nam Theun, having negative impacts on fishery and transportation in the headpond area). The PPER for the Nam Leuk Project reports that, while the resettlement of Nam Leuk families was successfully carried out, fishery in the southern villages declined over 1997–2001. The use of Asian Development Fund (ADF) for an essentially commercial project like Theun–Hinboun was also questioned within ADB at the formulation stage, but was eventually approved based on the understanding that project earnings would be used to increase the social expenditure allocation in the national budget to 20% in 2000. While this was not stipulated as a covenant, nor was a specific monitoring mechanism for this target adopted, the target was achieved as expected. If ADF is used for future private sector, commercially sustainable projects, a covenant should be included to direct at least part of the government earnings to poverty reduction activities.

6. Given rapid demand growth, the GMS is likely to remain heavily dependent on imported energy. Thus, the long-term aim (stage 4) of the GMS program is to establish grid-to-grid interconnection involving two or more countries that will require multiparty trading of power and, therefore, more efficient power markets in the long run. The expansion of power trading in the GMS will (i) provide energy security and regional stability; (ii) help efficiently utilize the subregion's potential by reducing investments in power reserves to meet peak demand, reduce operational costs, achieve more reliable supply, and reduce system losses; (iii) achieve environmental benefits by substituting hydropower for coal and other fossil fuels; and (iv) allow countries with energy surpluses to also benefit by servicing their deficit areas more efficiently with power imports from other grids.

7. Overall, the GMS program has been successful in promoting and enhancing cooperation on cross-border power trade and interconnections among its member countries. However, these were done through a large number of bilateral project-specific power purchasing agreements, as there is little progress in negotiating multilateral power purchasing agreements that allow for power trading between more than two countries. The Regional Power Trade Operating Agreement, which sets out the operating rules and guidelines supporting the creation of a regional power market, envisages the achievement of such multilateral trading in its latter phases, but a number of legal and technical issues still hinder progress, thus presenting opportunities for ADB as an honest broker to rectify in its future assistance. Technical and financial assistance for other types of projects should be considered (e.g., distributed generation, renewable energy including bio-energy, and demand-side management), including attention to potential carbon trading opportunities. Technology and experience within the region can be effectively transferred, e.g., from Thailand (on energy efficiency funds) and PRC (renewable energy including biomass/biogas technology and carbon trading). Assuming that the political situation permits, Myanmar should also be allowed to benefit from project-level activities.

Sources: ADB. 2002. *Project Performance Audit Report on the Theun–Hinboun Hydropower Project (Loan 1329-LAO)*. Manila; ADB. 2004. *Project Performance Audit Report on the Nam Leuk Hydropower Project*. Manila; ADB. 2007. *Midterm Review of the Greater Mekong Subregion Strategic Framework (2002–2012)*. Manila. Expanded draft; and ADB. 2008. *Sector Assistance Program Evaluation of the Energy Sector in the Greater Mekong Subregion*. Manila.

119. Environmental impact was controversial, however. Both projects have provided funds for the mitigation of their environmental and social impacts. One percent of the electricity export revenue from the Nam Leuk Project goes to the protection of the Phou Kao Khouay National Park, although there is concern that this is not being managed effectively. The project performance evaluation report for Theun–Hinboun reported negative environmental and social impacts, which were exacerbated by the lack of a resettlement plan and by a weak environmental mitigation program. On the social side, the physical relocation of persons was not anticipated; and on the environment side, increased

erosion and sediment loads reduced downstream flows on the Nam Theun, which also had an impact on fishery and transportation in the headpond area. The project performance audit report for the Nam Leuk Project (footnote 75) reported that the resettlement of Nam Leuk families was carried out successfully, but also cites a report on fish monitoring data suggesting that fishing activity in southern villages was adversely affected. These environmental concerns reflect the more general point noted that environmental policy remains to be fully embedded in all GMS activity. A recently-approved RETA,<sup>78</sup> with funding support from Sweden, is providing ongoing support for (i) establishing a competitive regional power market, and (ii) ensuring proper control of environmental impacts during development and implementation of regional power trading projects. One of the TA's major components will build capacity for managing environmental impacts of projects, since it is crucial for both environmental authorities and power utilities to be able to properly prepare and implement environmental impact assessments and environmental management plans. Overall, the rating on impact of energy projects is "substantial."

### **C. Tourism**

120. For this sector, there is no detailed case study analysis, and ratings are based on available reports. The key focus is on three loans under the ongoing Mekong Tourism Development Plan and six RETA operations, principally to support national tourism agencies, totaling \$38 million. The Mekong Tourism Development Strategy is designed to address critical bottlenecks that impede tourism in the subregion, focusing on (i) improving tourism-related infrastructure, (ii) providing support to pro-poor community-based tourism projects, (iii) promoting subregional cooperation through private sector participation in tourism marketing and promotion, and (iv) establishing mechanisms to increase and facilitate the movement of tourists across borders.

#### **1. Effectiveness and Efficiency**

121. A number of tourism-related infrastructure subprojects have suffered serious delays. There have been many networking meetings on pro-poor community-based tourism, and the Lao PDR has identified and implemented 17 products of this type of tourism, which reportedly have produced good results.<sup>79</sup> A recent Lao PDR government PCR indicated good progress on all components.<sup>80</sup> There has also been some progress in Cambodia and resumption of progress in Viet Nam. Subregional cooperation in tourism has been slow due to the need to reach consensus and organize multicountry meetings. Many workshops have been held and documents produced, and there has been improvement of tourism facilities at border posts, but critically no progress on a common GMS-wide visa. On the positive side, the six regional tourism TA projects were all successfully completed, with objectives fully accomplished. Overall, regional tourism operations are rated "effective" and "efficient."

#### **2. Sustainability**

122. The rating here is "likely to be sustainable." The key factors here are provision of counterpart government funds, interest from the private sector, and coordinating capacity of national tourism authorities. There are positive signs in that national coordination is reported to be working well in Lao PDR and Viet Nam, where counterpart funding remains adequate. In Cambodia, the government is committed to provide funds for its subprojects. However, there have been difficulties in private sector

<sup>78</sup> ADB. 2007. *Regional Technical Assistance Report: Facilitating Regional Power Trading and Environmentally Sustainable Development of Electricity Infrastructure in the Greater Mekong Subregion (Financed by the Government of Sweden)*. Manila.

<sup>79</sup> These 17 community-based tourism products implemented by the Lao PDR at 16 destinations in four provinces were estimated to have direct benefits for the project of more than \$300,000 and a total impact of \$1.6 million and were expected to increase significantly in the coming years (back-to-office report of 12 December 2007 for Loan 1970-LAO: Mekong Tourism Development).

<sup>80</sup> Lao National Tourism Administration. 2008. *Project Completion Report: Mekong Tourism Development Project in the Lao PDR*. Manila. Draft Final Report (30 June).

involvement, and as noted in para. 50, there is inadequate private sector funding to support the MTCO in Bangkok.

### 3. Impact

123. Tourism is an important sector for the GMS member countries, accounting for as much as 20% of GDP in Cambodia, 14% in Thailand, 11% in Viet Nam, and 9% in Lao PDR in 2006 (tourism working paper). How far the GMS program has contributed to this rapid growth in recent years is difficult to establish, in part because activities under the Mekong Tourism Development Plan are still ongoing, and in part because detailed assessments have not yet been undertaken. It seems there has been an increase in foreign exchange earnings, particularly in the Lao PDR, where total gross revenues increased at four destinations and for four companies that have received support from the plan. However, limited progress has been made at the subregional level. Available cross-border traffic data suggest that growth in the movement of international tourists traveling by road from Cambodia and Lao PDR to Viet Nam and vice versa has been modest. For example, international tourists accounted for only 25% of the total number of passengers crossing the Bavet border in Cambodia in 2003. This proportion increased to about 30% in 2007.<sup>81</sup> Similarly, there is still no firm evidence of the poverty-reduction effect of ADB-supported GMS tourism operations, and the concept of community-based tourism involving the poor, while attractive, is unlikely on its own to involve large numbers.

### D. Environment

124. The main GMS environment initiatives (accounting for \$26 million) have been under the headings of BCI (to protect threatened areas and ecosystems), SEA (to apply best practice environmental planning techniques in the GMS economic corridors and in areas affected by hydropower and tourism projects), and environmental performance assessment (EPAs) (to incorporate environmental planning techniques in national planning within the GMS). Pre-Core Environment Program activities involved environmental capacity building, flood management, and wetlands and river basin development. All in all, the 17 TA grants on environment approved from 1992 to 2007 amount to over \$37 million.

#### 1. Effectiveness and Efficiency

125. The GMS environment program has helped to catalyze external support (both financial and technical) owing to its regionally oriented approach. It has also offered a more synchronized and programmatic approach to environmental issues in the subregion, and by actively involving the PRC, it offers potential benefits from environmental cooperation that are not yet feasible in other regional arrangements. It took the first step in mainstreaming environmental issues across sectors at the subregional level through the SEA toward fully accounting for any harmful effect of greater connectivity on the environment. Through the demonstration effects of applying EPA and SEA tools, the environment program has also enriched national and local environmental policy and standards, hopefully paving the way for greater subregional harmonization. Other achievements involve (i) identification of regional environmental priorities through EPA, (ii) BCI's success in elevating the issue of biodiversity conservation to the regional level, and (iii) the anticipated role that the North-South Economic Corridor SEA will have on providing a regional perspective to mainstreaming environmental issues across development sectors. For these reasons, the ratings for environment initiatives are "effective" and "efficient."<sup>82</sup>

<sup>81</sup> ADB. 2008. *Project Performance Evaluation Report on the Greater Mekong Subregion: Phnom Penh to Ho Chi Minh City Highway Project*. Manila.

<sup>82</sup> The ratings are not highly successful, because transboundary environmental issues have not been addressed to any great extent.



## 2. Sustainability

126. The key issue here is whether GMS countries view the continuation of the environmental activities as essential per se, and not just how long external funding will be available to support these initiatives or how far governments will be able to go in using their own resources in these areas. A positive view is created by the increasing local ownership of environmental initiatives at the highest government levels within the GMS (para. 51). This has been matched by institutional and legislative developments in member countries. For example, Viet Nam has adopted the key components of the Core Environment Program in legislation. In Thailand, there has been cabinet-level recognition and support for conservation corridors. In Cambodia, SEA findings have been incorporated in the National Tourism Strategy. In the Lao PDR, the National Environment Committee has made the use of environmental planning assessment, a stated priority, and there are initiatives to institutionalize the technique in Cambodia, Thailand, and Viet Nam. Given the increasing ownership, these initiatives indicate the rating on sustainability is “likely.” However, the relative sophistication of some environmental planning techniques casts doubt on the local capacity to apply them in the absence of technical support, so this is an issue that needs to be addressed.

## 3. Impact

127. As yet, there has been little tangible effect from these initiatives. Even on some ADB projects, not all environmental issues have been addressed. It is too early to expect significant impacts, since the importance of mainstreaming the environment and sustainable development in other sectors began to be recognized only in 2002 (under Strategic Environmental Framework II) and becomes a key objective under the Core Environment Program only in 2006. The environmental assessment of the North–South Corridor Project, for example, is to be undertaken after most of the road construction is complete, and concerns have been raised about resettlement and environmental degradation associated with dam projects.

128. The subregional dimension of conservation does not yet appear to be addressed adequately. Conservation sites, by and large, cross national boundaries, but there is little consideration of cross-border issues. While it is acknowledged that GMS Core Environment Program places priority to confidence building measures, the higher level GMS fora such as the Summit, ministerial meetings, and the Senior Officials Meeting should provide an opportunity to for the GMS members to adopt mainstream environmental concerns and include environmental planning in resource allocation. In the Tenasserim site in Thailand, the greatest threat to biodiversity is resource extraction by well-organized syndicates using informal labor from neighboring countries. However, the program targets only the Thai communities located in the designated corridor. In Xepiane, the most important corridor for wildlife (wild bovids) is a seasonal migration route into the Virechey National Park in Cambodia in search of forage; however, the program focuses solely on the designated conservation corridor, which is of much less importance for key species. Opportunities for GMS-level collaboration should be taken as they arise, and the decision not to support the tripartite memorandum of understanding for transboundary cooperation among Cambodia, Lao PDR, and Viet Nam<sup>83</sup> was a missed opportunity. In the light of this, the rating for impact, while it must be tentative, is “modest.”

## E. Agriculture

129. The bottom–up assessment focused on the six agriculture RETA grants provided by the GMS Secretariat.

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<sup>83</sup> “Platform for Cooperation” is a tripartite memorandum of understanding for transboundary cooperation between Cambodia, Lao PDR, and Viet Nam that was signed in 2007 for comanagement and copatrolling. A request from the Forestry Department in the Lao PDR to use BCI funds to provide support for the memorandum of understanding was turned down by the World Wildlife Fund.

## 1. Effectiveness and Efficiency

130. The agriculture activities are rated “less effective.” The RETA operations were able to develop and secure approval for the agriculture strategic framework and the CASP, which is particularly commendable, considering that other GMS sectors created much earlier than agriculture have not undertaken such prioritization. The RETA grants have also helped set up a functional WGA and WGA Secretariat. However, the great number of subprojects identified under the CASP raised government expectations about the scope of WGA work, diluted its focus on the more pressing subregional issues, and overstretched resources. Moreover, not all the outputs specified under the completed RETA operations could be delivered owing to ambitious design, inadequate resources allocated, or implementation problems. ADB was also not able to use its country-based leverage to translate WGA agreements into concrete outcomes.

131. The rating for efficiency is “less efficient.” Two RETA operations were successful in attracting additional contributions from certain GMS members beyond the expected counterpart funds (e.g., the PRC’s financing of the Agriculture Information Network Service, and Thailand’s funding of biotechnology workshops). The six RETA activities correspond to about \$6 million in costs, which is still a reasonable amount, considering the myriad of issues financed (agriculture information system, biotechnology, biofuels, transboundary animal diseases control, agricultural trade diagnostic, and WGA support). One RETA took the effort to consult the private sector (biotechnology). These RETA activities did not integrate their activities with those of ASEAN and other subregional institutions to avoid duplication. While the CASP included an M&E framework, it is not clear to what extent the indicators are being tracked.

## 2. Sustainability

132. The rating for sustainability is “less likely.” The TA design for the Agriculture Information Network Service requires that each GMS member be responsible for maintaining and updating information regarding the country on the website and consider a policy on cost recovery and fees. Unfortunately, the GMS countries reveal a wide disparity in information and communication technology development (skills level, stage of website development, infrastructure, and resources) that threatens this model. With respect to the transboundary animal disease control RETA, regular reinforcement of the training given to poor livestock farmers was deemed needed to sustain their enthusiasm, hopefully “creating” demand for vaccination through demonstration of benefits (and thus encouraging the private sector to provide vaccines and other technologies for disease control programs). Regulatory support, especially for quarantine protocols, ought to have been prioritized by the subregional effort, since this gives more durable protection and makes better use of ADB’s influence on governments and the goodwill engendered by its projects, compared with investment in animal health services at the farm level. The RETA design also expected that the responsibility for coordinating government actions on the regional framework, laboratories, disease information systems, and training would be placed under ASEAN, funded by national budgets, or added as loan components to ongoing or new ADB projects. Discussions are under way, though, to give one of Thailand’s agencies custody of the agricultural biotechnology and biosafety gateway.

## 3. Impact

133. Given the relatively recent initiation of GMS cooperation on agriculture and the limited and preparatory character of the GMS agricultural interventions, achievement of results may be less evident and measurable compared to other GMS sectors. Hence, the evaluation did not undertake an assessment of impacts in this sector.

## **F. Health and Other Social Sectors**

134. This bottom–up assessment focused on 15 RETA grants (8 on health and 7 on other social sectors) and 4 special grants (all on health), as indicated in the list provided by the GMS Secretariat.<sup>84</sup> Thirteen of these RETA operations and one of the special grants have closed, and the remaining five are ongoing. The CDC projects account for 70% of the GMS health initiatives and is about half-way thru its target implementation period of 4.5 years.

### **1. Effectiveness and Efficiency**

135. The GMS health and other social sector activities are rated “less effective.” They have enhanced provincial-level capacity to counter CDC outbreaks through surveillance and response, as well as promoting community-based HIV/AIDS prevention. They have pioneered targeted and culturally specific communication approaches to inform ethnic minority groups in cross-border areas about health and other social risks from greater connectivity. However, they have not made as much progress at the subregional level. Disease outbreaks are not being reported systematically in the subregion, the basis for any joint disease control activities has not been laid down, and actual networking among these health professionals has not taken root outside of workshops and forums. Only one CDC project country achieved substantial policy and regulatory reform in enabling and sustaining surveillance and response systems (the foremost of which is funding), compared with the two others. Some subregional agreements facilitated under the GMS health or other social sector activities are yet to be adopted or operationalized, and the knowledge generated from the projects may not have been used effectively.

136. The GMS health and other social sectors activities are assessed as “efficient.” Aside from the administrative problems that commonly constrain national-level projects (e.g., lack of government staff or inadequate attention, slow approval and funds release, difficulty in finding consultants or poor consultant performance, etc.), the increase in number of countries and partner institutions magnifies the complexity of preparation and implementation arrangements. Project processing and startup for the health and other social sector special grants and RETA activities tend to be labor- and time-intensive, and implementation often takes twice or three times as long as envisaged. The benefits from GMS-sponsored forums and workshops have also been less optimal owing to the multiple translation requirements, and some 30% of the content is estimated to have been lost due to such translations. The decision to stage implementation into phases has helped in allowing project managers to learn from practical experience. For instance, phase 2 of the HIV/AIDS preventive education TA built on experiences gained from the first phase.

### **2. Sustainability**

137. The rating for sustainability is “less likely.” There are cases where a government proposed to adopt outputs, as in the case of the Lao PDR’s formalization of rapid response teams under GMS special grants on CDC. However, financing for disease prevention and treatment activities remains constrained beyond project completion, especially with agencies like the Global Fund Tuberculosis, AIDS, and Malaria; possibly phasing out its malaria initiatives in Cambodia and Viet Nam; and the World Bank and United States Agency for International Development winding down the dengue interventions. Migration and trafficking issues have not yet been effectively mainstreamed in budget allocations, so almost all interventions have been externally funded. Project staff did exert efforts to map and network with other organizations in order to synergize activities and collaboration. Such collaboration is especially critical with Mekong Basin Disease Surveillance, also working in this field. The health and other social sector activities did not actively build public–private partnerships, except perhaps in the tie-ups with NGOs and radio stations in one RETA on HIV/AIDS communication strategies. Experience

<sup>84</sup> The assessment excludes seven RETA activities classified under the HRD sector but reviewed under the GMS working paper on capacity development. It includes two RETA grants formerly classified under the GMS environment sector but later moved by the GMS Secretariat to the HRD sector.

from the special grant on HIV/AIDS community action and the RETA on malaria control highlight the trade-off between effectiveness and sustainability—incentive payments for community health workers were increased up to four times the government payments, with little evidence of government capacity or commitment to sustain this level of payment after project completion, and or of how the post-project participation of community health workers would be affected by the reinstatement of the lower incentive payments in the absence of subsidies from project funds.

### 3. Impact

138. The rating for impact is “modest.” On the positive side, managers of the health sector activities complied more with the projects’ M&E requirements compared with the other GMS sectors, as evidenced by the conduct of baseline surveys, surveillance surveys, pre- and post-activity surveys, and the engagement of project-specific M&E consultants under the HIV/AIDS special grants and TA activities. Such own-evaluations conducted during implementation serve to inform not only forthcoming projects but provide the opportunity to address problems while the interventions are still ongoing, and serve to build government’s ability to collect data, develop implementation guidelines, and draft technical papers. However, some surveys and monitoring identified in the design and monitoring frameworks were not done, especially baseline surveys, which field staff blame on the lack of programmed budget.

139. Table 18 shows the overall bottom–up evaluation to be “successful.”<sup>85</sup> The GMS program has built new assets and rehabilitated existing ones in support of greater accessibility and trade between GMS countries. However, there has been less success in encouraging policy reforms (e.g., CBTA, GMS-wide visa, SEA, etc.) or regulations to maximize the benefits from using these assets.

**Table 18: Summary Bottom–Up Evaluation**

Criteria	Transport and Trade Facilitation	Energy	Tourism	Environment	Agriculture	Health and Other Social Sectors
Relevance	Highly relevant	Highly relevant	Relevant	Relevant	Relevant	Relevant
Effectiveness	Effective	Effective	Effective	Effective	Less effective	Less effective
Efficiency	Efficient	Efficient	Efficient	Efficient	Less efficient	Efficient
Sustainability	Likely	Likely	Likely	Likely	Less likely	Less likely
Impact	Substantial	Substantial	Not assessed	Modest		Modest
<b>Overall</b>	<b>Successful</b>	<b>Successful</b>	<b>Successful</b>	<b>Successful</b>	<b>Partly successful</b>	<b>Partly successful</b>

Source: Operations Evaluation Mission.

## IV. CONCLUSIONS, ISSUES, LESSONS, AND RECOMMENDATIONS

### A. Conclusions

140. Taking “successful” ratings of both the top–down (para. 80) and bottom–up evaluation (para. 139), the overall assessment of the GMS program is “successful.”

141. Member countries have benefited from subregional cooperation in the GMS. The negative comments on some aspects of the GMS should not detract from the overall judgment that progress, while slow, has been very positive. Despite problems in individual sectors and projects, ADB has played an important catalytic role providing technical advice and financial support and, in the power sector, leveraging significant private sector funds. Naturally, difficulties and challenges remain. Table 19 gives a summary of the positive and negative aspects of ADB support to the GMS in a strengths,

<sup>85</sup> Given the substantial resources allocated to the transport and energy sectors, the rating for them was given more weight in determining the overall bottom–up assessment.

weaknesses, opportunities, and threats framework. Infrastructure needs in the subregion are substantial and far exceed ADB's funding capacity. Private sector involvement outside the power and tourism sectors has been limited. Economic corridors have not developed as expected. Cross-border trade and tourist flows have been slow to emerge, and only limited progress has been made in incorporating environmental concerns into planning. This, and the need to better align with *Strategy 2020*, call for a review of ADB's GMS strategy and the role ADB should play in the future in the GMS program.

**Table 19: SWOT Analysis: ADB and GMS**

<b>Strengths</b>	<b>Weaknesses</b>
Catalytic role Additional ADB funding for member DMCs Involvement of other agencies Public-private partnerships pioneered ADB technical support (e.g., Secretariat) Growing member ownership and direction	Slow progress on projects (e.g., corridors, CBTA) and GMS strategy Limited complementary national investments Limited project funding for larger integrated projects Not so effective internal coordination Some capacity building lacks focus Weak monitoring No clear strategy to transfer ADB roles to GMS governments
<b>Opportunities</b>	<b>Threats</b>
Potential to influence long-term development Regional power trade Economic corridors Control of communicable diseases Regional environmental regulations and biodiversity conservation Scope for private sector involvement	Lack of technical capacity in member DMCs Spread of bilateral agreements Divergence in member benefits Environmental degradation Social "bads" (e.g., sexually transmitted diseases)

ADB = Asian Development Bank; CBTA = Cross-Border Transport Agreement; DMC = developing member country; GMS = Greater Mekong Subregion; SWOT = strengths, weaknesses, opportunities, and threats.

Source: Operations Evaluation Mission.

142. The study concludes that any consideration of future institutional arrangements needs to be predicated on a clear understanding of the future purpose of the GMS program and the role of ADB within it. Currently, ADB's role in the GMS can be summarized as that of a facilitator (providing secretarial services to member countries); regional infrastructure development coordinator, "honest broker" (mediating and facilitating cross-border dialogue and investment); trainer (working to augment capacities of less-developed members for fuller participation); financial and policy catalyst (providing such capital and TA); and RCI technical adviser. While ADB engages at all these levels, at the operations level, performance could still be improved.

143. In the past 16 years, ADB's value added to the GMS program has been substantial in all of these roles in bringing together the member countries to the same table to discuss issues of common interest and find amicable solutions. The more successful the program becomes in terms of country involvement, the more critical will be the need for devising a coherent future strategy for the GMS program. Having achieved this level of success, ADB should try to explore ways of adding even more value by encouraging the GMS program to move to the next level of maturity where the members can take on more responsibilities. While the members have increased their capacity to prioritize the activities and determine the path taken by the GMS program, they have yet to take on more responsibilities for organizing and managing the various forums. To this end, the differing capacities of the various member countries need to be strengthened through capacity development programs.

144. The study suggests different ways that ADB can continue to add value. First, ADB should promote focusing on the "regional" nature of the program by clearly defining the additional regional benefit and costs in contrast to "national" benefits and costs. Regional benefits accrue through extending domestic markets, reaping the benefits of economies of scale, sharing research knowledge, and developing more of (pure and mixed) regional public goods compared to club goods. Second, having provided ample support for connectivity in the past, ADB can now add further value by also

providing additional support at the policy level, for example, in finalizing the CBTA, mainstreaming environment concerns in planning and facilitating regional power trading or regional bond market. Third, building on the trust that has been carefully nurtured over the years, with the long-term sustainability of the regional cooperation effort in mind, ADB can facilitate the formulation of a strategy to gradually make the GMS institutional structure more dependent on the member countries. This does not mean that ADB should withdraw from its other roles which bring in ADB's ability to draw good practices from its international experience. ADB's roles of financier, catalyst, honest broker, technical adviser, and trainer should continue to support regional cooperation (as indicated in ADB's Charter) as long as the GMS program needs it. Taking on this challenge of further adding value needs to be done gradually in consultation with the GMS member countries, taking into account their differing capacities and aspirations and providing support where necessary to build national capacity that is needed to enhance the sustainability of regional cooperation. The next RCSP is a good opportunity to develop a strategy that can support these "value additions" from ADB. With the goal of encouraging ADB to move from a successful program to a program that will continue to remain successful in the next decades by adding value, the remainder of this chapter discusses (i) issues that are emerging, (ii) lessons drawn from the past, and (iii) directional recommendations for the future. It is noted that only about 30% of the recommendations made in the 1999 evaluation of the GMS program (Appendix 4) has been adopted in the intervening period.

## **B. Issues**

145. **Definition of Regional Project.** The study shows (Table 1) that up to now, the definition of what constitutes a regional GMS project remains confusing, despite the discussion of this issue in the 1999 evaluation of the GMS program. The criteria for defining a regional project needs to include a description of the overall regional benefit that is greater than the sum of national benefits. For example, the CBTA, regional energy trade, and Asian bond market initiatives can produce excellent regional benefits. Difference between national capacity building for communicable disease prevention and surveillance can be contrasted with regional benefits of information sharing on disease vectors and treatment methods. Even the activities of one country can have regional impacts in the case of regional public goods such as biodiversity and ecosystem conservation. Bringing greater definitional clarity to national-level activities and subregional ones is important, particularly in light of ADF and country resources being earmarked for regional activities.

146. **Institutional Structure.** Given that the GMS is not a rule-based organization, many of the subregional units such as the MTCO and the EOC have no legal standing or sustainable funding avenues. While details of appropriate legal structure, funding avenues, and rule-based activities needed may vary across sectors, there is a need to begin with a review of institutional arrangements for software issues such as the CBTA, power trading, and monetary cooperation. The institutional and legal arrangements also become important in soliciting additional funding for the GMS program. As the regional cooperation in different sectors evolve, the appropriate nature of the legal, financial, and institutional arrangements for each sector will have to be carefully determined through informed pragmatic discussions among the members with the support of ADB. Care needs to be taken to avoid over institutionalizing or applying one-size-fits-all rules-based arrangements that may jeopardize the flexible arrangements of the activity based regional cooperation that led to the success of the GMS program up to now.

147. **Positioning of Agriculture.** The GMS RCSP refers to the provision of TA in agriculture, given that a majority of the GMS population depend on the sector for both food and livelihood. However, it does not provide parameters for cooperation in agriculture. The original aim in including the sector in the GMS-SF was to link agriculture initiatives with the road corridors and trade facilitation. However, the current small agriculture program has very weak links with the corridors and has focused on a diverse set of topics. Despite the recent focus on the CASP, ADB's involvement in agriculture in the

GMS has been very modest. Given its weak relevance to current ADB strategic priorities and the weak links with the corridors, continued GMS assistance to the sector needs examination.

### C. Lessons

148. **Integrated Approach is Important.** ADB's involvement in nine GMS sectors suggests a fragmented approach. Gradually focusing on fewer niche projects that truly coincide with ADB's known strengths could effectively position ADB as a strategic GMS partner. Past experience shows that the impact of spreading such assistance across several sectors has been modest. The processing and implementation of fewer but larger integrated projects with a multisector approach focused on developing economic corridors could be considered. Other GMS sectors could be retained for as long as there are countries or development partners willing to take the lead in their financing, or they could be folded into key GMS sectors under the concept of "economic corridors," where synergies across sectors can be developed and nurtured. Focusing on a specific corridor (such as the North–South Corridor as being discussed currently) as a pilot would allow building synergies across sectors and also manage the cumbersome implementation issues that will emerge.

149. **Provide a Balanced Program.** As cochair of high-level meetings and sector working groups, ADB has been effective in serving as an honest broker in balancing diverse country interests. As technical adviser and trainer, it has also paid greater attention to the needs of less-developed GMS countries. Learning from this experience, ADB will need to strike the proper balance between supply (strategic focus) and demand (the region's changing needs) for GMS projects. The technical advisory role includes providing knowledge products and services, which could further be strengthened by enhancing coordination with the other ADB departments like the RSDD, OREI, and ADB Institute.

150. **Develop Tools to Assess Effectiveness.** ADB's limited experience with partner organizations in the GMS has mostly been positive, but there have been opportunities when the partners' accountability for demonstrating value added could have been strengthened. ADB may consider tools to analyze cost-effective regional programs, since few projects include indicators of integration (most relate more to national achievements), and even fewer identify the associated risks (e.g., those arising from macroeconomic instability among individual countries). Most project-specific evaluations are still not providing information related to subregional outcomes or impacts, thus leaving the subregional program evaluation to rely on secondary sources of information. Even more discouraging is the lack of baseline information at the project level to support the validation of outcomes.

151. **Investment Climate is Important for Private Sector.** Past experience shows that involving the private sector to fund the unfulfilled demand for subregional investment is difficult. Attracting the private sector will require not only the provision of ADB-financed seed capital for infrastructure projects but also a focus on the investment climate within the member countries that encourages private sector participation. ADB already focuses on this at the national level, but the subregional dimension should also be taken into account. This will require improving the investment climate through strengthening the compatibility of various regulatory and legislative requirements across the GMS, including build-operate-transfer schemes. Country-level program loans can support the legal, policy, and regulatory reforms to accompany the "hard" connectivity investments, as well as TA that support situation analyses, policy dialogues, government authorship, and implementation capacity building and pilot implementation.

### D. Recommendations

152. A number of specific recommendations are given in the background papers of this study. The key recommendations are highlighted here. They can be broadly separated as recommendations on GMS strategy and institutional arrangements and GMS program- and project-level operations.

## 1. Improving Strategic and Institutional Performance

153. **Take Stock and Chart a Revised GMS Strategy with a Holistic Approach.** In line with the *Strategy 2020*, the revised GMS strategy should identify which areas the GMS program would focus on as it moves to the next stage of maturity. Up to now the focus has been on transport, trade facilitation, energy, and to a limited extent on health and environment. Once the CBTA implementation is in place and using the demonstration effect of connectivity through infrastructure development, private sector participation should be encouraged to areas such as transportation and energy. ADB needs to focus more on demonstrating the benefits of regional public goods such as reducing environmental degradation, and minimizing regional “bads” like human trafficking and the spread of communicable diseases which are the negative impacts of increasing connectivity.

154. **Develop and Strengthen DMC and Regional Institutions under the Revised GMS Strategy.** In response to the changes and challenges facing its clients, ADB’s *Strategy 2020* envisages four roles for RCI—a core area of operation (para. 9). Building capacity to be more responsible is a key role to emphasize as the GMS program evolves from nascent stage to adolescence stage of development. Since its birth in 1992, ADB has helped nurture the GMS program for the last 16 years, and greater country involvement at the highest political level in the GMS has been seen recently. Moving forward, ADB should take stock of the achievements of the maturing program and develop a strategy for ADB’s role over the next 10–15 years. The time has come to establish and strengthen the capacities of member countries and regional bodies to take on responsibility for institutional arrangements. One option would be to strengthen the capacity of GMS national coordinators and/or develop a secondment program for government staff in the GMS countries to be based either in ADB resident missions or at headquarters for a definite period to help undertake roles that ADB will eventually let go.

155. **Expand Cofinancing.** Identify other development partners, private sector, and the GMS member countries that can bridge the financing gap that exists in the GMS program. Funding needs for infrastructure in the subregion considerably exceed the funding capacity of ADB, particularly under ADF. To meet expansion plans already outlined for GMS infrastructure sectors will necessitate promoting more partnerships in cofinancing GMS activities than are currently available. One option to maximize leverage with other aid agencies and private investors is to avoid investing in too many small individual TA projects in varying sectors that are unlikely to attract external funding. More suitable are the highly demand-driven, integrated, flagship projects involving a number of countries bringing together different aspects of regional cooperation (e.g., infrastructure, trade environment, and social concerns) into an economic corridor-type project.

156. **Make Coordination More Effective.** The need to strengthen coordination between GMS sector working groups, between national and subregional projects within a country, between sector departments in ADB, and between the GMS program and the resident missions is a concern raised at several points in this study. For example, better coordination of transport sector strategy and environmental planning would have aided the mainstreaming of environment concerns in a rapidly growing subregion. Improvements in coordination can be facilitated by (i) strengthening the communication channels (that is beginning to emerge in some sectors) across GMS working groups, (ii) defining the role of ADB resident missions in regional cooperation, and (iii) ADB ensuring synergies across sector divisions.

157. **Bring Greater Clarity to Translation of *Strategy 2020* for Regional Cooperation and Integration.** Provide guidance on aligning the RCIS to the *Strategy 2020*. At times, there is a mismatch between the demand for sector assistance from the DMCs and ADB’s stance on core areas of operation. Given that regional cooperation is also a core area of operation itself, explicit guidance is needed on whether ADB should finance projects in sectors that are not specifically identified as core areas of operation, even if such sectors are considered by the DMCs themselves as very important in



advancing their RCI agenda. The areas of concern are noncore areas of operation in the *Strategy 2020* such as agriculture, health, tourism, and telecommunications.

## 2. Improving Program- and Project-Level Performance

158. **Emphasize Regional Benefits.** Focus on the subregional nature of projects emphasizing the additionality of regional benefits in the design and implementation of subregional projects. Monitor progress to ensure that regional outcomes are generated as expected during design. For example, transport projects may generate regional benefits only if cumbersome procedural difficulties of cross-border transport and trade facilitation are achieved. In regional public goods such as CDC, additionality of regional cooperation comes from ensuring sufficient flow of information across countries. In institutional development, correct the overall bias in favor of addressing national constraints instead of developing subregional arrangements. Focus capacity building on the opportunities and challenges of developing and implementing subregional activities, not only on sectoral or technical concerns.

159. **Engage in Greater Policy Dialogue.** For example, there is a need for raising awareness, providing policy advice, and supporting enforcement in the following areas: (i) mainstreaming environment, promoting land-use planning, watershed, and river basin management to halt the destruction of biodiversity, forests, and water resources; (ii) integrating social concerns such as spreading of HIV/AIDS to related infrastructure projects; (iii) managing other social impacts that surface with greater connectivity like trafficking; and (iv) ensuring the preservation of cultural heritage and equitable distribution of benefits from tourism to facilitate poverty reduction.

160. **Support the Implementation of Policy and Procedural Reforms.** Facilitate regional cooperation initiatives that generally take several years to accomplish on its own. For example, it is necessary to pay attention to “software” aspects (institutional arrangements) of cross-border and subregional traffic and trade to derive greater regional benefits from “hardware” that is in place. Other areas where implementation support may be needed are regional power trade, CDC, and transboundary animal disease control.

161. **Pay More Attention to Results Monitoring and Evaluation.** While most GMS sector strategies and project documents contain M&E frameworks, greater efforts should be made to establish baseline indicators and to track progress, and compare costs and benefits of investments (para. 81). To be more cost-effective, it is suggested to focusing on a few indicators that show achievements of regional benefits and costs and to monitor the progress in developing economic and environment corridors.

## ADB FINANCIAL SUPPORT FOR THE GMS

1. Almost \$6 billion was invested by the Asian Development Bank (ADB)<sup>1</sup> in the Greater Mekong Subregion (GMS) from 1992 to 2007 (equivalent to roughly 10% of total ADB resources over the period; see Table A1.1). Some 88% of this amount went to transport, being the centerpiece of the GMS program. Around 9% went to energy, while the remaining 3% was distributed across the other seven GMS sectors. If government resources and financing from other development partners are taken into account, the total costs (based on approved amounts) of GMS projects exceeded \$10 billion (based on approved amounts) over the 16 years;<sup>2</sup> using actual values for closed projects, the total cost is \$9 billion. Since the regional cooperation assistance program evaluation evaluates mostly ADB efforts rather than the entire GMS program, this appendix focuses on actual values of ADB's own resources and managed cofinancing.

**Table A1.1: Total Resources Approved for the GMS: 1992–2007 (\$ million)**

GMS Sector	ADB and Cofinancing <sup>a</sup>				Total Project Costs		
	Loan	TA	Grant	Total	Share of Total (%)	Total	Share of Total (%)
Agriculture		4	2	6	0.1	11	0.1
Energy	513	18		531	8.9	1,747	17.0
Environment		39		39	0.6	57	0.6
Human resource development		15	38	53	0.9	29	0.3
Multisector		22		22	0.4	23	0.2
Telecommunications		2		2	0.0	2	0.0
Tourism	35	3		38	0.6	51	0.5
Trade		5		5	0.1	7	0.1
Transportation	5,168	33	75	5,276	88.4	8,371	81.3
<b>Total</b>	<b>5,716</b>	<b>141</b>	<b>115</b>	<b>5,972</b>	<b>100.0</b>	<b>10,298</b>	<b>100.0</b>

ADB = Asian Development Bank, GMS = Greater Mekong Subregion, TA = technical assistance.

<sup>a</sup> The values are based on actual amounts for closed projects and approved amounts for ongoing projects.

Source: Values for completed projects are based on actual costs in loan, grant, and TA financial information system. For ongoing projects, values are taken from approved amounts based on the reports and recommendations of the President. Data for the column on total project costs was taken from approved amounts.

### A. Loans

2. As of 2007, ADB had approved a total of \$3.5 billion (excluding cofinancing) for the GMS consisting of 32 loans, of which 14 had been closed and 18 remained active. The loan amounts fluctuated across the years but never crossed the \$400 million threshold, except in 2007, when loans reached almost \$1.5 billion. This upsurge was principally due to additional financing to complete the Kunming–Haiphong Transport Corridor. Lending from ordinary capital resources (OCR) (\$2.4 billion) over the 16-year period was more than double that from the Asian Development Fund (ADF) (\$1 billion).

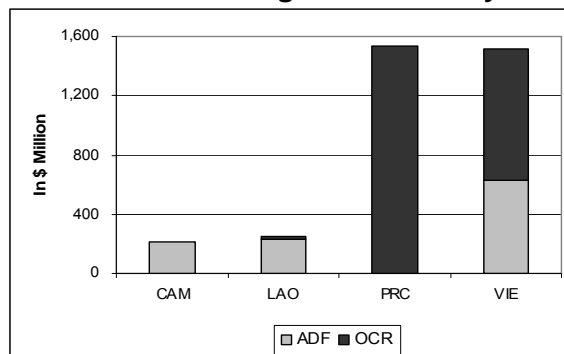
3. The People's Republic of China (PRC) and Viet Nam have accounted for 44% and 43%, respectively, of GMS loans. Figure A1.1 shows that all GMS loans for the PRC were OCR-funded. They were used exclusively for transport (roads, a railway, and a port). Until 2006, Viet Nam had relied on concessional ADF funding for its loans under the GMS, being reluctant to borrow from OCR except for energy projects. However, in 2007, Viet Nam applied for and received approval for an \$896 million OCR loan (supplemented by a \$200 million ADF loan) to complete the Kunming–Haiphong Transport Corridor, which will reduce travel time from Kunming and Haiphong port from 3 days to 1 day. This is the largest loan ever approved for the GMS and the biggest single project financing in ADB's history. If these two loans are excluded

<sup>1</sup> This amount includes cofinancing being administered by ADB but excludes government financing for the projects.

<sup>2</sup> The actual values for closed projects amount to \$9 billion, which is the basis for the data in this appendix.

from the analysis, Viet Nam's loan takeout would be \$425 million (from ADF money). This is still significantly higher than the \$253 million total for the Lao People's Democratic Republic (Lao PDR) and the \$214 million for Cambodia. The Lao PDR had also borrowed \$20 million from OCR funds to finance the GMS Nam Theun 2 Hydroelectric Project.

**Figure A1.1: ADF and OCR Lending to the GMS by Country: 1992–2007**

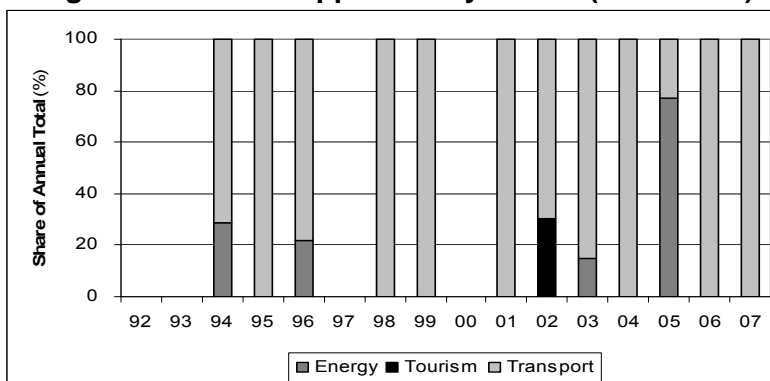


ADF = Asian Development Fund, CAM = Cambodia, GMS = Greater Mekong Subregion, LAO = Lao People's Democratic Republic, OCR = ordinary capital resources, PRC = People's Republic of China, VIE = Viet Nam.

Source: Loan financial and information system.

4. The GMS countries borrowed for only three sectors: transport, energy, and tourism. Figure A1.2 shows that approvals of GMS transport loans were fairly regular across 1992–2007. GMS energy loans were spread out in 1994 and 1996, and then in 2003 and 2005. The three tourism loans were extended in 2002.

**Figure A1.2: Loan Approvals by Sector (1992–2007)**



Source: Loan financial and information system.

5. Table A1.2 shows some indicators of loan portfolio performance, and compares those for GMS projects with those for projects provided to GMS member countries but not under the GMS program (referred to as non-GMS). For both the energy and transport sectors, the startup period tends to be longer for a GMS project relative to non-GMS. Implementation also takes longer for energy projects under the GMS program (in terms of both active and closed projects). These patterns seem logical because of the greater coordination requirements under the GMS compared with a national-level project. Transport provides interesting exceptions, though. For instance, the average age of active GMS transport projects (2.2 years) is about half that for non-GMS (4.6 years). On average, GMS transport projects take about 6.5 years to close, which is much lower than 7.9 years for non-GMS.

**Table A1.2: Loan Portfolio Indicators by Sector: 1992–2007**

<b>Sector</b>	<b>Number of Loans Approved</b>	<b>Number of Loans Closed</b>	<b>Average Period between Approval and Signing (months)</b>	<b>Average Age of Active Projects (years)</b>	<b>Average Implementation for Closed Projects (years)</b>
<b>GMS-Reported Loans</b>					
Energy	4	2	3.6	3.2	5.2
Tourism	3	—	2.4	4.9	—
Transport	25	12	4.2	2.2	6.5
<b>Total/Average</b>	<b>32</b>	<b>14</b>	<b>3.9</b>	<b>2.9</b>	<b>6.3</b>
<b>Other ADB Loans to GMS Countries</b>					
Energy	18	14	2.9	2.2	5.1
Transport	10	6	3.6	4.6	7.9

— = no data, ADB = Asian Development Bank, GMS = Greater Mekong Subregion.

Note: There are no tourism loans provided to GMS countries outside of the GMS program. The average age of active loans is reckoned as of 30 June 2008.

Source: Loan financial and information system.

6. Another unexpected outcome has been that, in a number of GMS transport cases, construction contracts were significantly lower than the original cost estimates at the time of appraisal. This meant that there were loan savings available as additional benefits for borrowers. The savings were used to fund additional works that otherwise would have had to wait for a budgetary allocation. The trade-off, however, is that these additional investments did not undergo the detailed economic scrutiny applied to the original proposals, which is a matter of routine for the use of ADB funds.

7. In energy, there have been four regional power projects in the GMS. Of these, the Theun-Hinboun and Nam Leuk projects in the Lao PDR were both completed with few difficulties. Of the two ongoing loans, the Regional Power Transmission Project in Cambodia has suffered serious implementation delays due to political uncertainty as a result of the long delay in forming a new government and late fielding of consultants. In early 2008, the loan closing date was recommended to be extended by at least 1 year to end-2009, and administration of the project was delegated to the resident mission. Physical progress for the loan was estimated as 35% against an average elapsed implementation period of 88% (as of 30 April 2008). The Nam Theun 2 Project in the Lao PDR has remained largely on track and is expected to be completed in November 2009. It has a physical progress rate estimated at 54% against the elapsed implementation period of 61% (as of 30 April 2008).

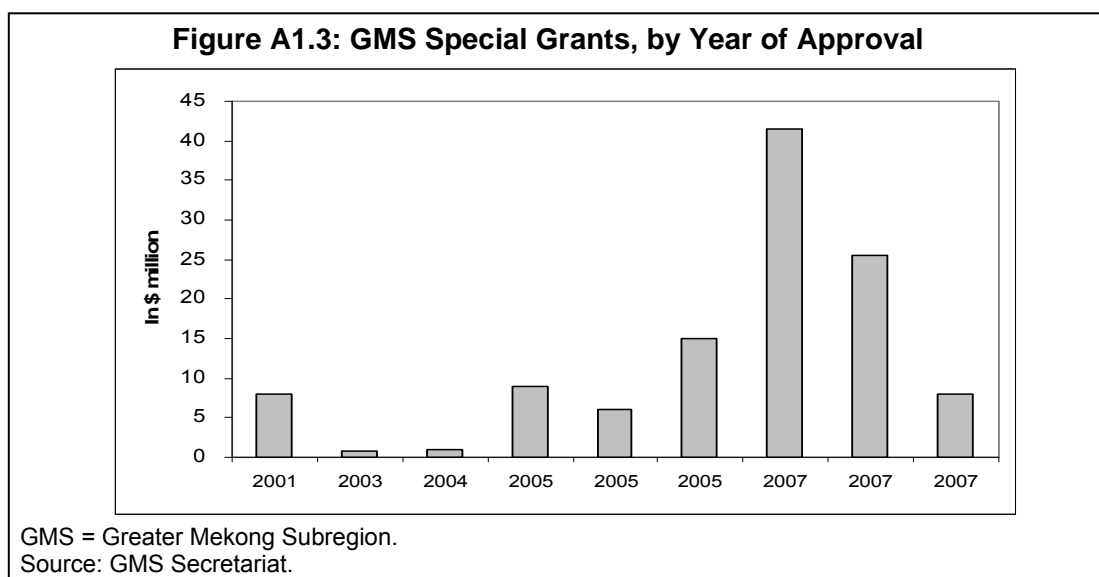
8. In tourism, delays have been an issue, although the volume of lending is much less. The loan that established the Mekong Tourism Development Project is broadly on schedule, with 77% overall project progress against 83% elapsed loan period (as of 30 April 2008), although a number of subprojects have been delayed for an average of 18 months, particularly those in Cambodia and Viet Nam.<sup>3</sup> The Lao PDR loan, including the upgrading of Luang Namtha airport and the construction of access roads to heritage sites, has remained largely on track, but the Cambodia and Viet Nam loans have suffered from implementation delays. For example, initial implementation of the Cambodia loan was very slow because of significant delay in the detailed design and procurement for the wastewater management system in Siem Reap and the construction of Rattanakiri airport. Subsequently, there was a change of project scope for the Siem Reap Project and an extension of the loan closing date by 30 months to 30 June 2010. Physical progress for the Cambodian loans is estimated at 57% against an average elapsed implementation period of 84% (as of 30 April 2008). Similarly, the Viet Nam loan has

<sup>3</sup> There is no comparable ADB loan assistance to the tourism sector to determine whether this length of delay is relatively short or long.

experienced implementation delays, with physical progress estimated at 65% against the elapsed implementation period of 80% (as of 30 April 2008). In early 2008, the loan closing date was extended by 1 year to 30 June 2009, and administration of the project was delegated to the Viet Nam Resident Mission. Project progress has also been very slow in Viet Nam, reportedly due to weak project staffing.

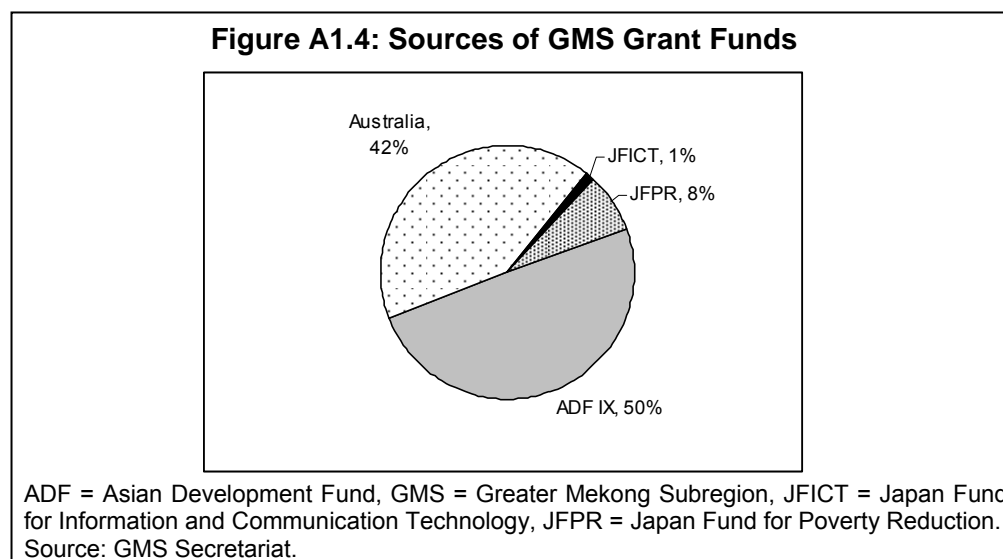
## B. Special Grants

9. As of end-2007, nine special grants equivalent to almost \$115 million had been approved for the GMS (Figure A1.3). Three of the grants were regional in scope (those approved from 2001 to 2004), while two grants each were provided to Cambodia, Lao PDR, and Viet Nam. About 65% of the total had been approved only in 2007, and none of the nine grants were provided earlier than 2001.



10. The GMS transport sector accounts for the biggest share of the special grants, totaling \$75 million, with an average size of \$25 million for the three grants. It is followed by the human resource development (HRD) sector, benefiting from a total of \$30 million in grant resources that average \$9.5 million per grant approval. These mean grant sizes are much larger than the ADB-wide average sizes for transport and communications (\$13 million) and health (\$5.5 million). Agriculture brings up the remainder with less than \$2 million in total grant resources, resulting in an average grant size of \$1 million. Compared with the ADB-wide average grant size for agriculture (\$7 million), the grants going to the GMS agriculture sector have been quite limited.

11. Based on Figure A1.4, the two main sources of the GMS special grants have been ADF IX (accounting for 50%, half of which went to communicable disease control and the other half to the northern transport network) and Australia (42%, all of which was provided to transport). The Japan Funds account for the remaining 9%.



12. Many indicators of portfolio performance cannot be derived (Table A1.3), as only one grant had been closed (Grant 9006 on Community Action for Preventing HIV/AIDS, the first GMS grant approved in 2001). Of the three sectors benefiting from grants, the longest mean gap between grant approval and signing was 12 months for agriculture, owing to the 18-month delay in securing the signature of Viet Nam on the Letter of Agreement.

**Table A1.3: Grant Portfolio Indicators by Sector: 1992–2007**

Sector	Number of Grants Approved	Number of Grants Closed	Period between Approval and Signing (months)
Agriculture	2	0	12
Human resource development	4	1	2
Transportation	3	0	2
<b>Total/Average</b>	<b>9</b>	<b>1</b>	<b>5</b>

Sources: Grant status reports, project performance reports, and implementation completion memoranda.

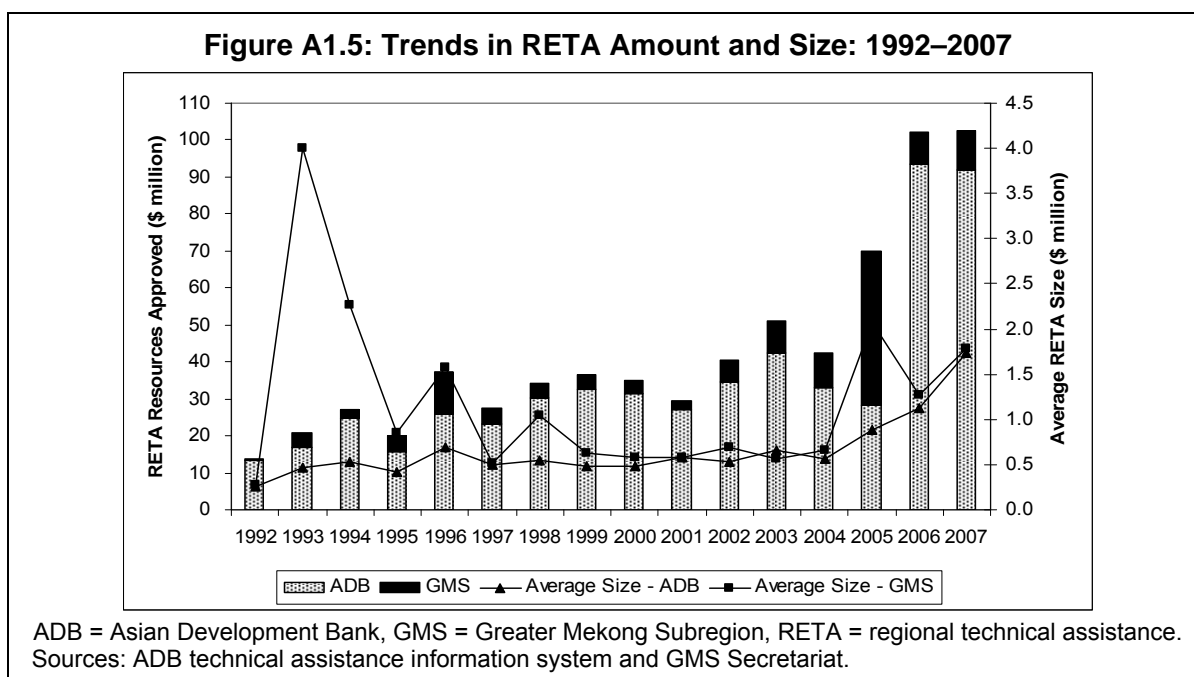
13. Grant 9006 on Community Action for Preventing HIV/AIDS was given an overall rating of highly satisfactory in its self-evaluation (implementation completion memorandum) based on its achievements in reaching out to sex workers, intravenous drug users, and patients being treated for sexually transmitted infections. It was considered as the first major HIV/AIDS prevention and care project managed by three governments at the provincial level. Based on the (technical and management) knowledge and experience gained by the national staff under this grant, additional funds were leveraged from the United Kingdom's Department for International Development; the Global Fund Tuberculosis, AIDS, and Malaria; and the World Bank in pursuit of similar objectives. The two agriculture, three health, and three transport grants are still ongoing and are currently rated as satisfactory in their respective project performance reports or grant status reports.

## C. Technical Assistance

### 1. RETA Portfolio by Amount and Size

14. During 1992–2007, a total of 138 technical assistance (TA) operations were approved for the GMS, consisting of 28 project preparatory technical assistance (PPTA) activities, 6 advisory technical assistance (ADTA) activities, and 105 regional technical assistance (RETA) activities.

The share of these RETA approvals<sup>4</sup> for the GMS in the total amount of ADB RETA averaged 16% or less than one fifth (Figure A1.5). This relatively low share does not mean that subregions other than the GMS received higher priority in ADB, since a 2007 Regional and Sustainable Development Department report<sup>5</sup> confirms that the GMS got more resources than the Central Asia Regional Economic Cooperation, South Asia Subregional Economic Cooperation, Brunei Darussalam–Indonesia–Malaysia–Philippines East ASEAN (Association of Southeast Asian Nations) Growth Area, Indonesia–Malaysia–Thailand Growth Triangle, etc. The relatively low GMS share is explained more by ADB's allocation of greater resources for region-wide (rather than for subregional) activities. This is most evident in 2006 and 2007, when RETA approvals breached the \$100 million mark owing to the increasing availability of TA trust funds. While the GMS program secured over \$40 million of RETA resources in 2005 alone, this was really an outlier. It was not able to tap into the 2006–2007 swelling of RETA approvals, as annual RETA resources for the GMS in those years remained less than \$11 million.



15. Figure A1.5 also illustrates that the average size of a GMS RETA was often higher than the typical ADB RETA during the first half of the period under review, mainly bolstered by GMS RETA approvals in 1993 and 1994 to help set up GMS cooperation. After 2001, the size of the average GMS RETA tended to move in line with that of the average ADB RETA, except in 2005 when the unusually large RETA amount for GMS environment caused the GMS average to spike.

## 2. RETA by Source of TA Funds

16. During 1992–2001, GMS activities were financed mainly from the Japan Special Fund (JSF) and, to a limited extent, from other trust funds (Table A1.4). From 2002 to 2007, the share of cofinancing and ADB's own TA resources to finance GMS RETA activities grew by more than four times, which more than offset the substantial contraction in JSF for GMS RETA. Over the entire period, external financing went mainly to environment (\$28.7 million), energy (\$9 million), HRD (\$7.1 million), and multisector (\$6.6 million), while JSF invested more on transport

<sup>4</sup> Because the PPTA and ADTA activities are not multicountry in scope and represent a much smaller share of total ADB PPTA and ADTA, these are omitted from the discussion of Figure A1.6, focusing instead on RETA. However, PPTA and ADTA activities are included in the succeeding discussions on the portfolio and ratings.

<sup>5</sup> ADB. 2007. *Regional Cooperation Thematic Report (2004–2005)*. Manila. Unpublished Manuscript. Page 21.

(\$10.7 million) and multisector (\$7.6 million). ADB's TA resources prioritized multisector (\$7.6 million) and HRD (\$4.7 million), sharing the focus given by the other fund sources on capacity development and social issues. ADB also had to increase RETA investments in sectors that did not receive much external or JSF funding such as agriculture, trade, and tourism.<sup>6</sup>

**Table A1.4: Sources of RETA Funds (\$ million)<sup>a</sup>**

GMS Sector	1992–2001				2002–2007				1992–2007			
	TASF	JSF	Other Trust Funds	Total	TASF	JSF	Other Trust Funds	Total	TASF	JSF	Other Trust Funds	Total
Agriculture	0.0	0.0	0.0	0.0	3.0	1.0	1.1	5.1	3.0	1.0	1.1	4.1
Environment	0.0	4.5	3.0	7.5	3.3	0.4	25.6	29.3	3.3	4.9	28.7	37.8
HRD	0.3	2.5	0.7	3.4	4.4	0.5	6.5	11.3	4.7	3.0	7.1	14.8
Multisector	1.8	7.6	0.8	10.1	5.8	0.0	5.9	11.7	7.6	7.6	6.6	21.8
Transport	0.6	8.6	1.0	10.2	2.6	2.1	1.4	6.1	3.1	10.7	2.4	16.2
Telecommunications	0.2	0.7	0.9	1.7	0.0	0.0	0.0	0.0	0.2	0.7	0.9	1.7
Trade	0.8	0.6	0.0	1.4	1.9	0.6	0.9	3.3	2.6	1.2	0.9	4.7
Tourism	0.1	1.3	0.0	1.5	1.7	0.0	0.0	1.7	1.8	1.3	0.0	3.2
Energy	0.7	0.0	2.8	3.5	2.7	0.8	6.2	9.7	3.4	0.8	9.0	13.1
<b>Total</b>	<b>4.3</b>	<b>25.8</b>	<b>9.1</b>	<b>39.2</b>	<b>25.2</b>	<b>5.4</b>	<b>47.6</b>	<b>78.2</b>	<b>29.5</b>	<b>31.2</b>	<b>56.7</b>	<b>117.4</b>

GMS = Greater Mekong Subregion, HRD = human resource development, JSF = Japan Special Fund, RETA = regional technical assistance, TASF = technical assistance special fund.

<sup>a</sup> Excludes single-country technical assistance, so the total does not tally with the total GMS technical assistance financing.

Source: Asian Development Bank technical assistance information system.

17. Table A1.5 illustrates that bilateral sources of cofinancing have given more support to GMS RETA than have multilateral sources. The former are led by Sweden (\$15.8 million), Netherlands (\$13.2, plus \$1 million from the National Poverty Reduction Strategies Fund), France (\$7.6 million), and PRC (\$4.6 million). Swedish assistance has been focused mainly on biodiversity corridors and the regional power trade, similar to the concentration of Dutch cofinancing on the biodiversity initiative. France has been more interested in transport (roads and railways) and energy (hydropower and power trade), and has contributed to the Phnom Penh Plan as well. PRC cofinancing has been more diverse, allocating relatively smaller amounts (never more than \$650,000) for agriculture and HRD strategy setting, trade facilitation, and core support.

**Table A1.5: Sources of Cofinancing for GMS Regional Technical Assistance: 1992–2007**

Source	Amount (\$ million)	Source	Amount (\$ million)
<b>Multilateral</b>	<b>7.24</b>	<b>Bilateral (continuation)</b>	
Cooperation Fund in Support of National Poverty Reduction Strategies	1.00	People's Republic of China	4.57
Global Environment Facility	0.80	Finland	0.75
Governance Cooperation Fund	0.25	France	7.62
International Fund for Agricultural Development	0.20	Japan (Japan Fund for Public Policy Training)	0.95
Poverty Reduction Cooperation Fund	4.99	Netherlands	13.20
Regional Cooperation and Integration Fund	0.45	New Zealand	1.20
<b>Bilateral</b>	<b>49.97</b>	Norway	2.09
Australia	1.29	Sweden	15.81
Belgium	1.02	Switzerland	1.00
		United Kingdom	2.78

GMS = Greater Mekong Subregion.

Source: Technical assistance information system.

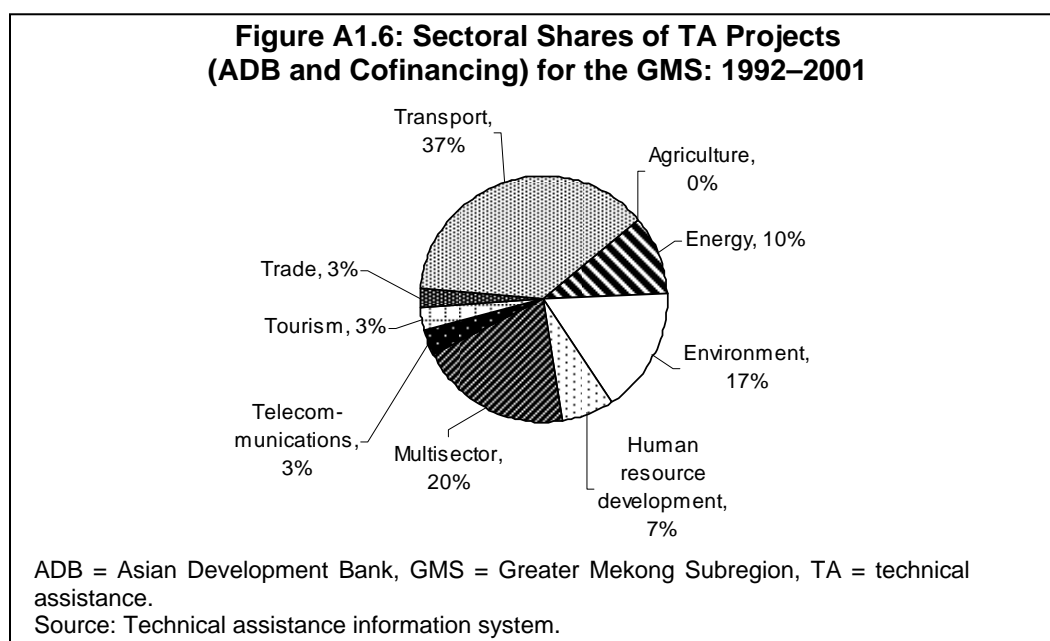
<sup>6</sup> According to the supplementary appendix on tourism, however, this sector is distinctive in that the GMS countries themselves have made substantial financial and in-kind contributions to finance the operations of the Tourism Working Group and the Mekong Tourism Coordination Office.



18. The Poverty Reduction Cooperation Fund has been the biggest partner among the multilateral sources, distributing \$5 million across a wide range of GMS social and environmental activities. If bilateral funding from the United Kingdom (\$2.8 million) is added to this amount, then British support to the GMS would become the third largest, surpassing that of France.

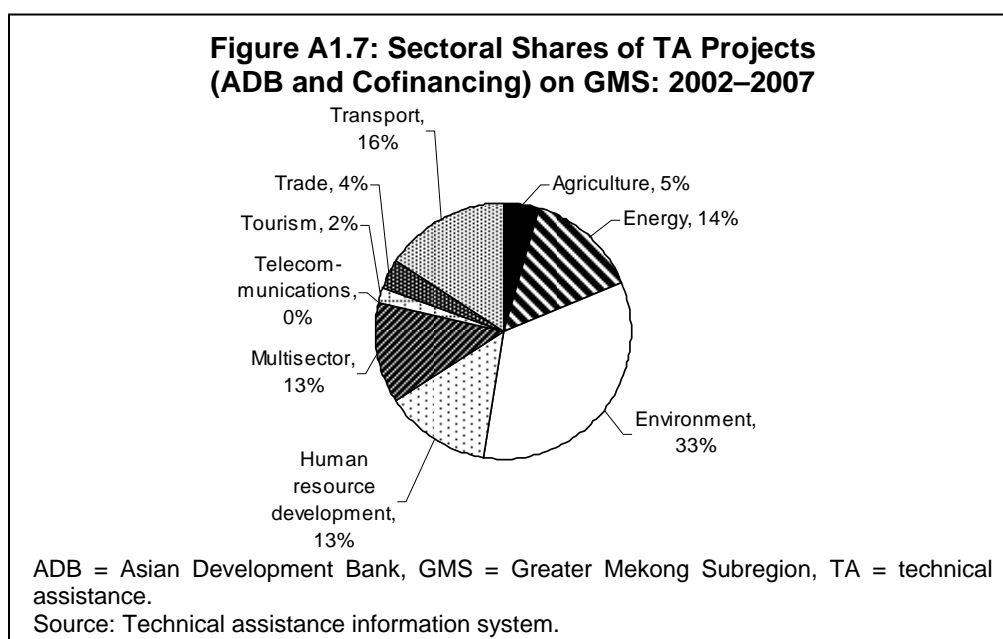
### 3. RETA by Sector

19. In terms of sectoral distribution, transport and multisector accounted for more than half of the TA resources (including PPTA and ADTA) approved for the GMS from 1992 to 2001 (Figure A1.6). This pattern is consistent with the GMS program, which is centered on transport corridors, supplemented by multisector activities, the majority of which have been core support activities that have laid down the architecture for the delivery of the GMS program.



20. However, with the adoption of the GMS Strategic Framework in 2001, the share of environment in RETA resources almost doubled to 34% (from 17% in 1992–2001), earning it the primary slot among the GMS sectors (Figure A1.7). The shares of the infrastructure sectors (transport and energy) from the previous period went down, although in absolute terms, only transport saw its RETA resources actually decline—from \$18.9 million in 1992–2001 to \$14.2 million in 2002–2007. The dramatic increase in RETA approvals for HRD (from \$3.4 million to \$11.9 million) over the two periods means that social concerns (mainly about HIV/AIDS<sup>7</sup> and other communicable diseases) also gained some headway in the GMS, now accounting for 13% of total GMS RETA resources for 2002–2007.

<sup>7</sup> Human immunodeficiency virus/acquired immunodeficiency syndrome.



21. Table A1.6 compares portfolio indicators across the GMS sectors. Agriculture accounted for the longest gap between approval and signing, owing to delays associated with transboundary animal disease control TA. The other sector with a relatively large average signing gap was HRD (7 months), pulled up by an outlier relating to 22 months of negotiations with a development partner for a malaria initiative. While tourism registered a 6-month difference between approval and signing, this figure came from only one TA and, therefore, may not be representative of the entire sector. The unavailability or non-applicability of signing dates was observed mostly in environment, multisector, and telecommunications. The average period between the approval and signing of the GMS environment TA activities was less than 4 months. One of the outliers is the 13-month signing gap for the Mekong River Commission Flood Management and Mitigation TA (its completion date was subsequently extended by 45 months to 2009, in part in recognition of the complexity of dealing with a large number of aid agencies). Another RETA with a slow start-up (9.5 months) was the TA on Critical Wetlands, which had the Mekong River Commission and the United Nations Development Programme (UNDP) as collaborating agencies. Its completion report attributed the slow preparation to its complex design and UNDP's dependence on Global Environment Fund grant approval to recruit consultants.

**Table A1.6: Summary of GMS TA Portfolio Indicators**

Sector	Number of TA Projects Approved	Number of TA Projects Closed	Period Between Approval and Signing (months)	Period Between Approval and Actual Completion <sup>a</sup> (months)	Elapsed TA Period, Original <sup>a</sup> (%)	Period Between Approval and Actual Closing <sup>a</sup> (months)	Ratio of Disbursement to Approved Amount <sup>a</sup> (%)	TA Savings <sup>a</sup> (\$'000)
Agriculture	6	3	8	34	193	40	91	12.7
Energy	16	11	2	37	202	45	97	23.1
Environment	18	14	5	36	224	55	91	44.2
HRD	22	16	7	43	298	46	86	43.3
Multisector	14	12	0	42	223	53	89	187.3
Telecommunications	5	5	0	44	650	53	89	18.8
Tourism	6	5	6	22	272	30	90	27.3
Trade	8	5	1	30	222	34	94	12.8
Transportation	42	35	3	33	323	44	89	64.7
<b>Total/Average</b>	<b>137</b>	<b>106</b>	<b>3</b>	<b>37</b>	<b>275</b>	<b>45</b>	<b>89</b>	<b>61.1</b>

GMS = Greater Mekong Subregion, HRD = human resource development, TA = technical assistance.

<sup>a</sup> Calculated only for TA projects that had already been closed.

Sources: Technical assistance performance reports, technical assistance completion reports, and technical assistance information system.

22. In terms of RETA implementation periods, the GMS sectoral activities that took the longest to complete (about 3.5 years) are found in telecommunications, HRD, and multisector. The last two cover the capacity development part of GMS assistance and, therefore, represent the attempt to stretch available funding for the longest time possible. The long implementation period for telecommunications was due mainly to a RETA to establish a backbone network project. Ironically, it was a small-scale TA worth only \$150,000, but it took 4 years and 9 months to complete. The average elapsed period for environmental TA in comparison with the original completion date is a significant 224%, such that almost all of the TA had to be extended (with a mean of 22 months). Implementation of about 40% of the GMS environment portfolio took more than 4 years. Despite its early commencement, the activity that took the longest to complete (75 months) was the Poverty Reduction and Environmental Management TA, partly due to extensive negotiations on the selection of watersheds. In contrast, tourism TA projects took about 22 months or slightly less than 2 years to complete, possibly because they had relatively straightforward designs (either for training or strategy setting). However, if the original completion dates were factored in, the GMS agriculture sector came closest to meeting its targets by having the least elapsed period (193%). However small, it still implied that agriculture on average underestimated the implementation period by almost half of what was actually required. Across the nine GMS sectors, the mean elapsed period based on the original completion was 275%.

23. Environment TA activities accounted for the longest period between approval and financial closing (55 months), but due mainly to RETA approved before 2003. This record has since been improved, as environment RETA projects that were approved in 2003 and beyond were closed after 21 months. With respect to disbursement ratios, energy TA seems to be the most efficient in using up its resources, with its 97% utilization rate. The rest of the GMS sectors leave about 10% undisbursed, yielding TA savings that range from \$12,800 (agriculture and trade) to \$187,300 (multisector).

24. The combined TA performance report ratings for GMS TA across all sectors is given in Table A1.7. According to the self-evaluations, the criterion that received the most number of “highly satisfactory” ratings is timely consultant recruitment (22% were highly satisfactory in mobilizing the consultant teams early in the implementation period). On the other hand, 85% of the TA operations were rated as partly satisfactory or unsatisfactory by their own project officers with regard to slippages in the timely completion of the TA. The ratings for timely financial closing are slightly better, with only 65% being rated partly satisfactory or unsatisfactory. In terms of satisfactory ratings, 99% and 97% were recorded for “major changes in scope and/or implementation arrangements and/or cost overrun” and “other deliverables (fellowship, training, vehicles, and equipment),” respectively, indicating that project officers believe they stayed true to the original TA design, costing, and expected outputs.

**Table A1.7: Summary of GMS TA Performance Report Ratings, All Sectors**

TPR Criterion	HS		S		PS		US		Subtotal	
	No.	%	No.	%	No.	%	No.	%	No.	%
Timely consultant recruitment	24	21.8	51	46.4	14	12.7	21	19.1	110	100.0
Timely report submission	5	5.7	78	88.6	3	3.4	2	2.3	88	100.0
ADB assessment of report quality	3	3.5	78	90.7	3	3.5	2	2.3	86	100.0
EA assessment of report quality	2	2.6	72	92.3	3	3.8	1	1.3	78	100.0
Changes or cost overrun	0	0.0	103	99.0	1	1.0	0	0.0	104	100.0
Other deliverables	1	1.3	74	97.4	1	1.3	0	0.0	76	100.0
EA's contribution	2	2.4	80	95.2	2	2.4	0	0.0	84	100.0
Timely completion	0	0.0	15	15.2	8	8.1	76	76.8	99	100.0
Overall implementation progress rating	0	0.0	89	83.2	18	16.8	0	0.0	107	100.0
Timely financial closing	0	0.0	27	34.6	12	15.4	39	50.0	78	100.0

ADB = Asian Development Bank, EA = executing agency, GMS = Greater Mekong Subregion, HS = highly satisfactory, PS = partly satisfactory, S = satisfactory, TA = technical assistance, TPR = technical assistance performance report, US = unsatisfactory.

Source: Technical assistance performance reports.

## ADB LENDING AND NONLENDING OPERATIONS IN THE GMS (1992–2007)

GMS Sector	Date Approved	Type	No.	Amount (\$ million)	Project Name
AGR	31-May-02	ADTA	6034	0.15	Study on Subregional Issues in the Agriculture Sector in the Greater Mekong Subregion
AGR	9-Jun-03	ADTA	6110	0.30	Promoting Partnerships to Accelerate Agriculture Development and Poverty Reduction in the Greater Mekong Subregion
AGR	18-Dec-03	Grant	9036	0.75	Improving Poor Farmers' Livelihoods through Postharvest Technology
AGR	4-Jun-04	Grant	9047	1.00	Improving Poor Farmers' Livelihoods through Rice Information Technology
AGR	11-Oct-04	ADTA	6192	1.00	Transboundary Animal Disease Control to Reduce Poverty and Enhance Market Opportunities for Livestock Farmers in GMS
AGR	17-Dec-04	ADTA	6214	1.00	Strengthening Capacity and Regional Cooperation in Advanced Agricultural Science and Technology
AGR	23-Jun-06	ADTA	6324	1.00	Expansion of Subregional Cooperation in Agriculture Sector
AGR	27-Mar-07	ADTA	6390	0.45	Transboundary Animal Disease Control for Poverty Reduction in the GMS
AGR	30-Aug-07	ADTA	6324	0.20	(Supplementary) Expansion of Subregional Cooperation in Agriculture Sector
EGY	8-Nov-94	Loan	1329	226.0	Theun–Hinboun Hydropower
EGY	20-Sep-95	Core	5643	0.08	Subregional Electric Power Forum – GMS
EGY	22-Aug-96	PPTA	5697	2.50	Se Kong–Se San and Nam Theun River Basins Hydropower Development Study
EGY	10-Sep-96	Loan	1456	90.5	Nam Leuk Hydropower Development
EGY	28-Nov-97	PPTA	2926	0.58	Nam Ngum 500 kV Transmission – Lao PDR
EGY	14-Jul-99	PPTA	3222	1.00	Se San 3 Hydropower – Viet Nam
EGY	16-Jul-99	ADTA	3225	0.14	Analyzing and Negotiating Financing Options for the Nam Leuk Hydropower Project Cost Overruns – Lao PDR
EGY	14-Jul-00	ADTA	5920	0.90	Regional Indicative Master Plan on Power Interconnection in the Greater Mekong Subregion
EGY	10-Jan-03	PPTA	4078	0.73	GMS: Cambodia: Preparing the Power Distribution and Greater Mekong Subregion Transmission Project
EGY	21-Apr-03	ADTA	6100	0.85	Study for a Regional Power Trade Operating Agreement in the Greater Mekong Subregion
EGY	9-Nov-03	PPTA	4213	0.70	GMS Nam Theun 2 Hydropower Development Project
EGY	12-Dec-03	PPTA	6147	0.80	Preparing the GMS Power Interconnection Project, Phase I
EGY	16-Dec-03	Loan	2052	71.3	Cambodia: GMS Transmission Project
EGY	16-Mar-04	PPTA	4323	1.00	GMS Nam Theun 2 Hydropower Development Project Phase II
EGY	4-Apr-05	Loan	2162	125.5	Nam Theun 2 Hydroelectric Project
EGY	3-Jan-06	ADTA	6301	0.90	Developing the GMS Energy Sector Strategy (formerly GMS Energy Sector Strategy Study)
EGY	16-Jan-06	ADTA	6304	1.20	GMS: Regional Power Trade Coordination and Development
EGY	19-Jul-06	PPTA	4816	0.80	GMS: Northern Power Transmission Project
EGY	13-Nov-07	ADTA	6301	0.15	(Supplementary) Developing the GMS Energy Sector Strategy
EGY	12-Dec-07	PPTA	7026	0.76	Na Bong–Udon Thani Power Transmission – Lao PDR
EGY	19-Dec-07	ADTA	6440	5.00	Facilitating Regional Power Trading and Environmentally Sustainable Development of Electricity Infrastructure in the Greater Mekong Subregion
ENV	9-Feb-95	ADTA	5622	1.00	Subregional Environmental Monitoring and Information System
ENV	9-May-96	ADTA	5684	1.67	Subregional Environmental Training and Institutional Strengthening in the GMS
ENV	31-Dec-97	ADTA	5771	1.00	Poverty Reduction and Environmental Management in Remote GMS Watersheds
ENV	20-Mar-98	ADTA	5783	1.60	Strategic Environmental Framework for the GMS
ENV	22-Dec-98	ADTA	5822	1.65	Protection and Management of Critical Wetlands in the Lower Mekong Basin
ENV	29-Dec-99	ADTA	5899	0.60	Subregional Environmental Monitoring and Information System (Phase II)
ENV	14-Nov-00	PPTA	3544	0.85	Nam Ngum River Basin Development – Lao PDR
ENV	11-Apr-02	PPTA	3854	0.06	GMS: Cambodia Road Improvement Project – Small-Scale Technical Assistance for Environmental Assessment
ENV	12-Dec-02	ADTA	6069	1.60	National Performance Assessment and Subregional Strategic Environment Framework in the GMS
ENV	4-Aug-03	ADTA	6115	0.80	Poverty Reduction in Upland Communities in the Mekong Region through Improved Community and Industrial Forestry
ENV	16-Dec-03	ADTA	6149	1.00	Support for the Mekong River Commission Flood Management and Mitigation Program
ENV	13-Feb-04	ADTA	6167	0.05	Cooperation Opportunities between ADB and Mekong River Commission
ENV	17-Dec-04	ADTA	6213	0.40	GMS Biodiversity Conservation Corridor Initiative
ENV	9-Mar-05	ADTA	6234	0.25	Regional Environmental Compliance and Enforcement Network
ENV	5-Apr-05	ADTA	6238	0.09	SSTA for Preparing Environmental Inputs for the Second GMS Summit
ENV	13-Oct-05	ADTA	6263	0.15	Establishment of the GMS Environment Operations Center
ENV	16-Dec-05	ADTA	6289	24.97	Core Environment Program and Biodiversity Corridor Initiative in GMS
ENV	15-Dec-06	ADTA	6367	0.98	Sesan, Sre Pok, and Sekong River Basins Development Study in Kingdom of Cambodia, Lao People's Democratic Republic, and Socialist Republic of Viet Nam
HRD	18-Apr-96	ADTA	5681	0.60	Cooperation in Employment Promotion and Training in the GMS
HRD	17-Sep-97	ADTA	5751	0.15	Prevention and Control of HIV/AIDS in the GMS
HRD	30-Jun-98	ADTA	5794	0.80	Study of Health and Education Needs of Ethnic Minorities in the GMS
HRD	16-Dec-99	ADTA	5881	0.45	Preventing HIV/AIDS Among Mobile Populations in the Greater Mekong Subregion
HRD	7-Dec-00	ADTA	5958	0.60	Rollback Malaria Initiative in the Greater Mekong Subregion

GMS Sector	Date Approved	Type	No.	Amount (\$ million)	Project Name
HRD	7-Dec-00	ADTA	5881	0.16	(Supplementary) Preventing HIV/AIDS Among Mobile Populations in the Greater Mekong Subregion
HRD	21-Dec-00	ADTA	5970	0.15	Drug Eradication in the Greater Mekong Subregion
HRD	8-May-01	Grant	9006	8.0	Community Action for Prevention of HIV/AIDS
HRD	21-Dec-01	ADTA	6017	0.50	Capacity Building for National Institutions Involved in the GMS Economic Cooperation Program
HRD	25-Jun-02	ADTA	6038	0.15	Networking with the Asian Institute of Technology
HRD	25-Oct-02	ADTA	6056	0.80	GMS Phnom Penh Plan for Development Management
HRD	19-Dec-02	ADTA	6083	1.00	ICT and HIV/AIDS Preventive Education in the Cross-Border Areas of the GMS
HRD	16-May-03	ADTA	6106	0.15	Financing Needs for HIV/AIDS Prevention and Care in Asia and the Pacific
HRD	22-Aug-03	ADTA	6118	0.15	Promoting NGO Support for Poverty Reduction in the Greater Mekong Subregion
HRD	30-Oct-03	ADTA	6130	0.15	Study on Urban Violence in the Public Realm-Towards a More Effective Urban Upgrading
HRD	22-Mar-04	ADTA	6056	0.35	(Supplementary) Phnom Penh Plan for Development Managers in the GMS
HRD	4-Oct-04	ADTA	6190	0.70	Preventing the Trafficking of Women and Children and Promoting Safe Migration in the GMS
HRD	20-Oct-04	PPTA	6194	0.60	GMS Regional Communicable Disease Control (formerly Communicable Diseases Control in GMS)
HRD	12-Nov-04	ADTA	6198	0.50	Capacity Building on Promoting Sustainable Development in the GMS
HRD	29-Mar-05	ADTA	6237	0.80	GMS Phnom Penh Plan for Development Management (Phase II)
HRD	17-May-05	ADTA	6242	0.15	Developing New Policy Paradigms for Sustainable Livelihoods Protection and Natural Resource Management Among Ethnic Minorities in GMS
HRD	23-May-05	ADTA	6243	0.75	Strengthening Malaria Control Strategies for Ethnic Minorities
HRD	15-Jun-05	PPTA	6194	0.25	(Supplementary) Communicable Disease Control in Border Areas in the GMS
HRD	1-Jul-05	ADTA	6247	0.70	HIV/AIDS Vulnerability and Risk Reduction Among Ethnic Minority Groups through Communication Strategies
HRD	27-Jul-05	ADTA	6237	0.50	(Supplementary) GMS Phnom Penh Plan for Development Managers (Phase II)
HRD	1-Aug-05	ADTA	6237	2.27	(Supplementary) GMS Phnom Penh Plan for Development Managers (Phase II)
HRD	21-Nov-05	Grant	0025	9.0	Regional Communicable Diseases
HRD	21-Nov-05	Grant	0026	6.0	Regional Communicable Diseases
HRD	21-Nov-05	Grant	0027	15.0	Regional Communicable Diseases
HRD	23-May-06	ADTA	6237	0.50	(Supplementary) GMS Phnom Penh Plan for Development Managers (Phase II)
HRD	9-Aug-07	ADTA	6237	0.25	(Supplementary) GMS Phnom Penh Plan for Development Managers (Phase II)
HRD	16-Aug-07	ADTA	6407	1.00	GMS Phnom Penh Plan for Development Managers (Phase III)
HRD	2-Oct-07	Core	6413	0.20	Strengthening Human Resource Development Cooperation in the GMS
HRD	7-Nov-07	Core	6413	0.02	(Supplementary) Strengthening Human Resource Development Cooperation in the GMS
MUL	9-Mar-92	Core	5487	0.27	Studies on Subregional Cooperation Among Cambodia, the PRC, Lao PDR, Myanmar, Thailand, and Viet Nam – Phase I
MUL	10-Jun-93	Core	5535	4.00	Promoting Subregional Cooperation Among Cambodia, the PRC, Lao PDR, Myanmar, Thailand, and Viet Nam – Phase II
MUL	30-Sep-94	Core	5535	1.26	(Supplementary) Promoting Subregional Cooperation Among Cambodia, the PRC, Lao PDR, Myanmar, Thailand, and Viet Nam – Phase II
MUL	23-Jul-96	Core	5693	3.00	Promoting Subregional Cooperation Among Cambodia, the PRC, Lao PDR, Myanmar, Thailand, and Viet Nam – Phase III
MUL	22-Dec-99	Core	5886	0.80	Promoting Subregional Cooperation Among Cambodia, the PRC, Lao PDR, Myanmar, Thailand, and Viet Nam – Phase IV, Year 1
MUL	14-Dec-00	Core	5961	0.80	Promoting Subregional Cooperation Among Cambodia, the PRC, Lao PDR, Myanmar, Thailand, and Viet Nam – Phase IV, Year 2
MUL	17-May-02	ADTA	6032	0.50	Support to the Greater Mekong Subregion Summit of Leaders and Related Activities
MUL	19-Dec-02	Core	6084	1.00	Promoting Subregional Cooperation Among Cambodia, the PRC, Lao PDR, Myanmar, Thailand, and Viet Nam – Phase V
MUL	2-Jul-03	ADTA	6113	2.20	Making Markets Work for the Poor
MUL	2-Sep-03	ADTA	6121	0.40	Rural, Urban, and Subregional Linkages in the Mekong Region: A Holistic Approach to Development and Poverty Reduction
MUL	6-May-04	ADTA	6171	0.75	Reviewing Poverty Impact of Regional Economic Integration in the GMS (formerly Unmasking Cross-Border Poverty in GMS)
MUL	23-Sep-04	Core	6186	1.00	Strengthening the GMS Economic Cooperation Program
MUL	1-Apr-05	ADTA	6113	0.03	(Supplementary) Making Markets Work for the Poor
MUL	25-Apr-05	ADTA	6113	0.03	(Supplementary) Making Markets Work for the Poor
MUL	13-Sep-05	ADTA	6171	0.10	(Supplementary) Reviewing Poverty Impact of Regional Economic Integration in the GMS
MUL	11-Oct-05	Core	6262	2.50	Enhancing the Development Effectiveness of the Greater Mekong Subregion Economic Cooperation Program
MUL	21-Nov-05	ADTA	6113	0.39	(Supplementary) Making Markets Work for the Poor
MUL	2-Dec-05	ADTA	6277	0.95	Public Policy Training
MUL	20-Mar-06	ADTA	6310	0.60	Development Study on the GMS North-South Economic Corridor
MUL	11-May-07	ADTA	6113	0.28	(Supplementary) Making Markets Work Better for the Poor
MUL	18-Sep-07	Core	6262	0.95	(Supplementary) Enhancing the Development Effectiveness of the Greater Mekong Subregion Economic Cooperation Program
TEL	2-Oct-95	Core	5645	0.03	Meeting of Telecommunications Officials
TEL	28-May-97	PPTA	5738	0.77	East Loop Telecommunications Project in the GMS
TEL	18-Jun-97	Core	5741	0.05	Subregional Telecommunications Forum – GMS
TEL	17-May-00	PPTA	5915	0.15	Establishment of Backbone Telecommunications Network Project Phase I (SSTA)

GMS Sector	Date Approved	Type	No.	Amount (\$ million)	Project Name
TEL	2-Nov-01	ADTA	6004	0.70	GMS Telecommunications Sector Policy Formulation and Capacity Building
TRA	16-Nov-93	PPTA	1981	0.32	Heilongjiang and Yunnan Expressways (PRC PPTA)
TRA	16-Nov-93	PPTA	1982	0.40	Second Ports Development (PRC PPTA)
TRA	29-Nov-93	PPTA	1997	2.10	Second Road Improvement – Viet Nam
TRA	18-Jul-94	PPTA	5586	1.00	Study of the Lao–Thailand–Viet Nam East–West Transport Corridor
TRA	29-Sep-94	Loan	1325	150.0	Yunnan Expressway
TRA	3-Nov-94	PPTA	2197	0.50	Airports Improvement
TRA	2-Mar-95	Loan	1354	30.0	Saigon Port Project
TRA	31-May-95	PPTA	1997	0.85	(Supplementary) Second Road Improvement – Viet Nam
TRA	31-Aug-95	Loan	1369	48.0	Champassak Road Improvement
TRA	9-Nov-95	PPTA	5649	3.00	GMS Infrastructure Improvement: Ho Chi Minh City to Phnom Penh
TRA	19-Jan-96	Loan	1427	52.0	Fangcheng Port Project
TRA	29-May-96	ADTA	5686	0.18	Mitigation of Nonphysical Barriers to Cross-Border Movement of Goods and People
TRA	18-Jul-96	PPTA	5691	0.10	Thailand–Cambodia–Viet Nam Southern Coastal Road Corridor
TRA	21-Sep-96	Loan	1487	160.4	Second Road Improvement
TRA	11-Dec-96	PPTA	5710	3.00	Study of the Lao–Thailand–Viet Nam East–West Transport Corridor
TRA	12-Dec-96	Loan	1503	15.0	Siem Reap Airport
TRA	27-Feb-97	PPTA	5728	0.60	Chiang Rai–Kunming Road Improvement via Lao PDR
TRA	26-Aug-97	ADTA	5749	0.55	Cross-Border Movement of Goods and People in the GMS
TRA	27-Oct-97	PPTA	2903	0.80	Border Towns Urban Development – Thailand
TRA	16-Dec-97	Core	5762	0.45	Special Studies on Selected Operational Issues and Impact Evaluation Study of Rural Roads in Countries in the Greater Mekong Subregion
TRA	15-Dec-98	Loan	1659	40.0	Phnom Penh–Ho Chi Minh City Highway
TRA	15-Dec-98	Loan	1660	100.0	Phnom Penh–Ho Chi Minh City Highway
TRA	24-Jun-99	Loan	1691	406.6	Southern Yunnan Road Development
TRA	12-Jul-99	PPTA	3220	0.54	Guangxi Highway Development (PPTA PRC)
TRA	16-Jul-99	ADTA	5850	0.95	Facilitating the Cross-Border Movement of Goods and People in the GMS
TRA	20-Dec-99	ADTA	3348	0.69	East–West Corridor Coordination – Lao PDR and Viet Nam
TRA	20-Dec-99	Loan	1727	177.0	East–West Corridor Project
TRA	20-Dec-99	Loan	1728	165.0	East–West Corridor Project
TRA	22-Dec-99	PPTA	5885	0.35	GMS Preinvestment Study for the East–West Economic Corridor
TRA	2-Feb-00	ADTA	3396	0.15	Assessing A Concession Agreement for the Lao PDR: Chiang Rai–Kunming Road Improvement Project
TRA	20-Mar-01	PPTA	3642	0.77	Preparing the Western Yunnan Roads Development Project – PRC
TRA	9-Oct-01	Loan	1851	260.4	Guangxi Roads Development
TRA	26-Nov-01	PPTA	3780	1.00	North–Northeast Region Area Development – Thailand
TRA	19-Dec-01	PPTA	3817	0.60	Preparing the Northern Economic Corridor Project – Lao PDR
TRA	4-Apr-02	PPTA	3852	0.15	GMS: Cambodia Road Improvement Project – Small-Scale Technical Assistance for Economic Analysis
TRA	11-Apr-02	PPTA	3855	0.15	GMS: Cambodia Road Improvement Project – Small-Scale Technical Assistance for Resettlement Study and Social Impact Assessment
TRA	31-May-02	PPTA	3868	0.40	GMS: Cambodia Road Improvement Project Engineering Design Update
TRA	26-Nov-02	Loan	1945	60.0	GMS: Cambodia Road Improvement
TRA	17-Dec-02	PPTA	4050	1.00	Preparing the Kunming–Haiphong Transport Corridor Project – Viet Nam
TRA	20-Dec-02	Loan	1989	88.5	GMS: Northern Economic Corridor
TRA	9-Apr-03	ADTA	6098	0.80	Implementing the Agreement for Facilitation of the Cross-Border Transport of Goods and People in the Greater Mekong Subregion – Phase 1
TRA	23-May-03	ADTA	4142	0.80	Preventing HIV/AIDS on Road Projects in Yunnan Province (ADTA PRC)
TRA	23-May-03	PPTA	4119	0.50	Guangxi Roads Development II (PPTA PRC)
TRA	18-Jun-03	PPTA	4129	0.50	Dali–Lijiang Railway (PPTA PRC)
TRA	28-Oct-03	Loan	2014	410.9	Western Yunnan Roads Development
TRA	5-Nov-03	ADTA	6134	0.15	GMS Southern Coastal Corridor (SSTA)
TRA	16-Sep-04	Loan	2094	471.4	Guangxi Roads Development II
TRA	20-Oct-04	ADTA	6193	0.15	GMS Infrastructure Connections in Northern Lao (SSTA)
TRA	20-Oct-04	ADTA	6195	0.95	GMS Transport Sector Strategy Study
TRA	2-Dec-04	Loan	2116	220.0	Dali–Lijiang Railway Project (Yunnan Province)
TRA	23-Dec-04	PPTA	6227	0.42	Coordinating for GMS: North–South Economic Corridor Bridge Project (formerly Third Mekong Bridge)
TRA	10-Mar-05	PPTA	6235	1.00	GMS Southern Coastal Corridor
TRA	14-Jun-05	PPTA	4050	0.35	(Supplementary) Preparing the Kunming–Haiphong Transport Corridor (GMS Hanoi Lao Cai Railway Upgrading)
TRA	12-Aug-05	PPTA	6251	0.50	GMS Rehabilitation of the Railway in Cambodia
TRA	14-Sep-05	ADTA	4645	1.50	Restructuring of the Railway in Cambodia
TRA	29-Sep-05	PPTA	4657	0.50	Yunna–Yuxi Mengzi Railway
TRA	5-Dec-05	PPTA	6251	0.13	(Supplementary) GMS Rehabilitation of the Railway in Cambodia
TRA	19-Dec-05	Loan	2222	6.0	GMS Kunming–Haiphong Transport Corridor Noi–Bai–Lao Cai Highway Technical Assistance
TRA	6-Mar-06	ADTA	6307	0.80	Implementation of the Greater Mekong Subregion Cross-Border Transport Agreement

GMS Sector	Date Approved	Type	No.	Amount (\$ million)	Project Name
TRA	28-Apr-06	PPTA	4782	0.50	Central Yunnan Roads Development (PPTA PRC) [Wuding–Kunming]
TRA	28-Apr-06	PPTA	6235	0.08	(Supplementary) GMS Southern Coastal Corridor
TRA	26-May-06	PPTA	4792	0.50	Guangzi Longlin–Baise Expressway (PPTA PRC)
TRA	27-Oct-06	ADTA	6307	1.00	(Supplementary) Implementation of the Greater Mekong Subregion Cross-Border Transport Agreement
TRA	8-Dec-06	PPTA	4913	0.60	GMS: Luang Prabang Airport Improvement
TRA	13-Dec-06	Loan	2288	57.8	GMS Rehabilitation of the Railway in Cambodia
TRA	19-Dec-06	Loan	2302	137.5	GMS Kunming–Haiphong Transport Corridor: Yen Vien–Lao Cai Railway Upgrading Project
TRA	24-Apr-07	PPTA	6227	0.10	(Supplementary) Coordinating for GMS: North–South Economic Corridor Bridge Project (formerly Third Mekong Bridge)
TRA	25-May-07	ADTA	4645	0.25	(Supplementary) Restructuring of the Railway in Cambodia
TRA	14-Aug-07	Loan	2345	850.0	Western Guangxi Roads Development Project
TRA	27-Sep-07	Grant	0082	41.5	Northern GMS Transport Network Improvement
TRA	28-Sep-07	PPTA	4970	0.40	Western Yunnan Roads Development II (PPTA PRC) [(formerly [Ruili–Longlin] Expressway)]
TRA	28-Nov-07	Grant	0095	25.5	Southern Coastal Corridor
TRA	28-Nov-07	Grant	0096	8.0	Southern Coastal Corridor
TRA	28-Nov-07	Loan	2372	150.5	GMS Southern Coastal Corridor
TRA	28-Nov-07	Loan	2373	15.0	GMS Southern Coastal Corridor
TRA	14-Dec-07	Loan	2391	896.0	Greater Mekong Subregion: Kunming–Hai Phong Transport Corridor—Noi Bai–Lao Cai Highway Project (OCR)
TRA	14-Dec-07	Loan	2392	200.0	Greater Mekong Subregion: Kunming–Hai Phong Transport Corridor—Noi Bai–Lao Cai Highway Project (ADF)
TRD	17-Nov-00	ADTA	5951	0.75	Small- and Medium-Size Enterprise Growth and Development in the Mekong Region
TRD	21-Dec-01	ADTA	6020	0.60	Facilitating Cross-Border Trade and Investment for Small and Medium Enterprise Development in the GMS
TRD	15-Dec-03	ADTA	6148	0.40	Strengthening the Capacity of Financial Sector Regulators and Supervisors
TRD	18-Dec-04	ADTA	6210	0.30	Small- and Medium-Size Enterprise Growth and Development in the Mekong Region (Phase II)
TRD	23-Dec-04	ADTA	6228	0.60	Facilitating Cross-Border Trade and Investment for SME Development in the GMS (Phase II)
TRD	10-Feb-05	ADTA	6231	0.15	SSTA to Support Development of the Action Plan on Trade and Investment Facilitation in GMS
TRD	31-Oct-05	ADTA	6266	0.50	Business Environment in GMS
TRD	19-Jul-06	ADTA	6328	1.30	Support to Trade Facilitation and Capacity Building in the GMS
TRD	17-Apr-07	ADTA	6148	0.08	(Supplementary) Strengthening the Capacity of Financial Sector Regulators and Supervisors
TRM	23-Oct-95	ADTA	5647	0.13	Regional Program to Train Trainers in Tourism in the GMS
TRM	24-Jun-97	ADTA	5743	0.60	Mekong/Lancang River Tourism Planning Study
TRM	29-Sep-98	ADTA	5807	0.13	Tourism Skills Development in the GMS
TRM	28-Dec-99	PPTA	5893	0.60	Mekong/Lancang River Tourism Infrastructure Development
TRM	12-Dec-02	Loan	1969	15.6	GMS: Mekong Tourism Development
TRM	12-Dec-02	Loan	1970	10.9	GMS: Mekong Tourism Development
TRM	12-Dec-02	Loan	1971	8.5	GMS: Mekong Tourism Development
TRM	16-Jul-04	ADTA	6179	0.80	GMS Tourism Sector Strategy
TRM	8-Dec-05	PPTA	6279	0.90	Preparing the Sustainable Tourism Development (formerly Pro-Poor Tourism Development)
<b>Total</b>				<b>5,972</b>	

ADB = Asian Development Bank, ADF = Asian Development Fund, ADTA = advisory technical assistance, AGR = agriculture, EGY = energy, ENV = environment, GMS = Greater Mekong Subregion, HIV/AIDS = human immunodeficiency virus/acquired immunodeficiency syndrome, HRD = human resource development, ICT = information communications and technology, Lao PDR = Lao People's Democratic Republic, MUL = multisector, NGO = nongovernment organization, OCR = ordinary capital resources, PPTA = project preparatory technical assistance, PRC = People's Republic of China, SSTA = small-scale technical assistance, TEL = telecommunications, TRA = transport, TRD = trade, TRM = tourism.

Source: Asian Development Bank.

## GREATER MEKONG SUBREGION AND REGIONAL PUBLIC GOODS

1. The Greater Mekong Subregion (GMS) is a case of activity-based, as opposed to institutional- or rules-based, integration. The distinction is that, while institutional integration arises from legal agreements and institutional arrangements, activity-based integration relies on the incentive for member countries to cooperate to provide public and quasi public goods on a regional, as opposed to a national, basis. As such, integration of this type is persisted only with as far as all members find it beneficial to collaborate. Given this basis, an appropriate conceptual framework for initial discussion of the GMS is the economic theory of regional public goods.

2. Regional public goods have been classified along two dimensions: first, the degree to which they match the classic properties of public goods—nonrivalry in consumption and non-excludability—and second, the conditions under which they are produced (so-called “aggregator technology”). The differing characteristics of regional public goods by these dimensions will determine how they can be supplied most efficiently.

3. The classification below follows a 2004 study.<sup>1</sup> Along the dimension of “publicness,” there are four categories.

- (i) **pure public goods**, where additional use does not reduce availability for others (nonrivalry) and where it is not possible to separate and charge individual users (non-excludability); where benefits of such goods are dispersed across a region, they are pure regional public goods;
- (ii) **impure public goods**, where there is partial rivalry in consumption (for example due to congestion or queuing) or where it is possible to exclude some users through charging;
- (iii) **club goods**, where full exclusion is possible and pricing can ration use; and
- (iv) **joint products**, where more than one output is involved and at least one output has public good characteristics.

4. In terms of technology for the production of such goods, six categories are identified conventionally.

- (i) **summation**, where the overall level of the public good supply equals the sum of the contributions of individual participating countries, with substitutability so that extra effort by one can compensate for smaller effort by another;
- (ii) **weighted sum**, where the overall level of public good supply is a differentially weighted sum of individual country contributions, so that some countries will be more important providers than others;
- (iii) **weakest link**, where the smallest country contribution determines overall supply for the region;
- (iv) **weaker link**, where the smallest country contribution has the greatest impact on supply, followed by the second smallest contribution, and so forth;
- (v) **best shot**, where the largest country contribution determines overall supply for the region; and
- (vi) **better shot**, where the largest country contribution has the greatest impact on supply, followed by the second largest contribution, and so forth.

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<sup>1</sup> Sandler, T. 2004. “Demand and Institutions for Regional Public Goods” in Estevadeordal, A., B. Frantz, and T. Nguyen (eds). *Regional Public Goods: From Theory to Practice*. Washington, DC. Inter-American Development Bank-ADB.



5. These various categories can be combined to illustrate the range of regional public good initiatives in the GMS (see table).

**GMS Regional Public Goods Classification**

<b>Aggregation Technology</b>	<b>Pure Public Good</b>	<b>Impure Public (Mixed) Good</b>	<b>Club Good</b>	<b>Joint Products</b>
Summation		Treatment of AIDS patients		
Weighted sum		Watershed management	Tourism promotion and power grid	Preserving ecosystems
Weakest link	Curbing spread of communicable disease			
Weaker link		Cross-border trade facilitation	Road infrastructure	Telecommunications interconnections
Best shot		Agricultural research		
Better shot				

AIDS = acquired immunodeficiency syndrome, GMS = Greater Mekong Subregion.

Source: Adapted from Sandler, T. 2004. "Demand and Institutions for Regional Public Goods" in Estevadeordal, A., B. Frantz, and T. Nguyen (eds). *Regional Public Goods: From Theory to Practice*. Washington, DC. Inter-American Development Bank-ADB.

6. Considering these examples, curbing the spread of a communicable disease is the clearest example of a pure public good. All citizens benefit, and there is no rivalry involved. As the disease will be spread from the most infected country, the effort at the weakest link in the chain will determine the overall impact in the region.

7. There are several examples of impure public goods. Treatment of AIDS patients involves rivalry in consumption, as only a limited number can be treated, although there are widespread benefits for those who are not yet infected. The total impact at the regional level will be the sum of patients treated in the individual countries. Watershed management for the Mekong River will involve some rivalry in consumption and excludability for the water and sanitation component. As different GMS countries will have different hydrological and related conditions, management of the river will require different efforts in different countries, and total regional impact will be a weighted sum, with some countries having a larger role than others. Cross-border trade facilitation is an impure public good, because it is possible to exclude goods from nonparticipating countries. The overall effect on trade will be determined by the speed of reform in the countries where the remaining barriers to trade are higher. The output of regionally funded agricultural research is nonrival but only in principle, as information is excludable from nonparticipants. Its success at a regional level will be determined by the efforts of the most advanced research group.

8. Regional infrastructure schemes (such as roads and power grids) are normally club goods as some form of charging will be possible, even though externalities may not be captured in the price. For a power grid, regional impact will be a weighted sum of country efforts, although for cross-border road connections the quality of roads in countries with less-developed networks will hold back cross-border trade flows and thus determine total regional impact. Tourism promotion for the Mekong is also potentially excludable through charges for promotional services, and as some countries have more tourism infrastructure than others, total regional impact will be a weighted sum.

9. Preservation of ecosystems and biodiversity create joint products, both environmental protection, which is a pure public good, and some forest and agricultural commodities, which

are pure private goods. As different ecosystems exist in different GMS members, the total regional impact of their protection will be weighted. Finally, the establishment of a telecommunications network through an optical fiber interconnection will create an information superhighway that will have both public and private characteristics, as not all “connectivity” can be charged for. Total regional impact will be determined by capacity in the sectors of the less advanced member countries.

10. This type of classification has been used to identify where international agencies should focus their efforts in relation to regional public goods. Without assistance, goods will be underprovided, relative to the optimum, (i) where there are pure or impure public goods with a summation technology, so that efforts of different countries are substitutable and there is a free-rider problem; (ii) where for club goods poorer member countries cannot afford the full cost of supplying these goods; and (iii) where weaker or weakest link technology is involved, and poorer member countries lack the capacity to supply at the relevant standard. The rationale for different GMS projects can be assessed from this perspective. In principle, for example, it provides a justification for involvement with health and road projects (the weaker link case) and for some environmental projects (the weighted sum case) in Lao People’s Democratic Republic and Cambodia. However, full justification of such interventions cannot be assessed on *a priori* grounds and requires estimates of the costs and benefits involved.

## SELECTED LESSONS FROM EXPERIENCE ON REGIONAL COOPERATION

1. Lessons from the Operations Evaluation Department's Greater Mekong Subregion (GMS) evaluation of 1999:<sup>1</sup>
  - (i) Regional projects should demonstrate the positive returns from adopting a regional rather than a national approach;
  - (ii) Consideration should be given to establishing a regional cooperation facility and other instruments for dedicated funding for regional programs;
  - (iii) Linkages between national programs and priorities and GMS programs priorities are weak;
  - (iv) Regional technical assistance allocations appear to be driven by supply considerations than GMS priorities;
  - (v) Greater attention is required on the impact of national policies on the returns to GMS investments;
  - (vi) Given its resource constraints, the Asian Development Bank (ADB) cannot effectively provide support to all GMS activities. One option is to support primarily a limited number of transport and power links, with support to other sectors being focused on ensuring maximum social, economic, and environment benefits from these investments; and
  - (vii) ADB needs an exit strategy from the GMS program.
  
2. Recommendations from the 2007 GMS midterm review:<sup>2</sup>
  - (i) Need to transform transport corridors into economic corridors by integrating the other GMS sectors (trade, investment, and tourism) into the subregional transport projects;
  - (ii) Adopt a more balanced approach between physical and nonphysical infrastructure investments by paying more attention to "soft" sectors (e.g., health and education) and "software" components (e.g., trade and investment facilitation, promotion of private sector participation, and skills development) of cooperation;
  - (iii) Clarify strategic and program focus in the human resource development (between education, health, and labor) and prepare strategic frameworks for telecommunications and trade and investment sector;
  - (iv) Contain and mitigate the undesirable effects of subregional cooperation, thus contributing to poverty reduction;
  - (v) Maximize complementarities with the Association of Southeast Asian Nations and other regional initiatives; and
  - (vi) Intensify information dissemination efforts to promote greater ownership at the local level and broaden participation and support.
  
3. Lessons derived from a review of selected literature on regional cooperation initiatives:<sup>3</sup>
  - (i) **Regional cooperation is not easy, and implementation of stated intentions is frequently weak.** Partner countries are frequently unwilling to give up sovereignty in key areas. As a result, many regional organizations are weak, and cooperation initiatives are poorly implemented. It helps if (a) countries have shared interests, (b) an external party can play an honest broker role without dominating the process, (c) external funds are available to provide incentives for

<sup>1</sup> ADB. 1999. *Impact Evaluation Study of the Asian Development Bank's Program of Subregional Economic Cooperation in the Greater Mekong Subregion*. Manila.

<sup>2</sup> ADB. 2007. *Midterm Review of the Greater Mekong Subregion Strategic Framework (2002–2012)*. Manila.

<sup>3</sup> Items i–vii were adapted from Linn, Johannes. 2008. *The Experience with Regional Cooperation Organizations: Lessons for Central Asia*. Paper presented at the Regional Economic Cooperation: Lessons for Central Asia, ADB, Manila, 29 July.

- cooperation, and (d) regional and national strategies work in the same direction and are linked.
- (ii) **Effective regional cooperation takes time and requires gradual and flexible implementation.** European Union experience confirms the benefits of gradualism. It helps to (a) set realistic targets that create a visible benefit for members, (b) have an initial narrow focus on a limited set of issues, (c) shift goals if in the short term it is not possible to make progress on one set, and (d) let some countries move ahead to closer cooperation if not all members wish to move at this pace.
  - (iii) **Successful cooperation requires leadership.** Strong leadership by one or more countries can have an important catalytic role, provided they are not so dominant as to ignore the interests of other, often smaller partners.
  - (iv) **Membership in a regional cooperation group should be based on shared geography and regional interests.** A large regional grouping, not united by common borders or interests, runs the risk of fragmentation.
  - (v) **A “spaghetti bowl” effect should be avoided.** Members should avoid joining too many overlapping organizations, since this may create a divergence of interests and a diversion of the time of regional negotiators.
  - (vi) **For trade and transport, it is essential to link transport investment with trade facilitation and to convert transport corridors into broader economic growth poles.** Maximizing the benefits from regional road or rail networks requires both further investment in associated infrastructure in the transport corridors to stimulate further economic activity and removal of procedural obstacles to trade flows.
  - (vii) **Cooperation in the use of natural resources is difficult but offers strong potential benefits for all parties.** Water and energy are key resources over which there have been many disputes but where constructive cooperation is possible. The Plan Puebla Panama has been heavily criticized for its impacts on rainforests and indigenous peoples, thus illustrating the need to incorporate sound migration policies and sustainable use of natural resources into the regional integration program.
  - (viii) **There should be no special treatment.** New lending instruments or separate project pipelines should not be developed for regional cooperation projects. Instead, they should follow the same guidelines that govern other financing activities.<sup>4</sup>
  - (ix) **Explore various funding arrangements to sustain operation and maintenance of existing transport corridors.** These include membership fees, contributions by governments, traffic-based usage fees, and external support (footnote 4).
  - (x) **Returns to infrastructure investment are probably highest during the early stages of development.** This is when infrastructure is scarce and basic networks have not been completed. Returns on infrastructure investment tend to fall, sometimes sharply, as economies reach maturity.<sup>5</sup>
  - (xi) **Most multilateral institutions have weak instruments and incentives for their staffs to design regional approaches, programs, and projects.** The ADB country directors, country managers, and resident representatives have

<sup>4</sup> Inter-American Development Bank. 2002. *Implicit IDB Strategy for Regional Integration: Its Evaluation*. Office of Evaluation and Oversight. Washington, DC.

<sup>5</sup> Roland-Holst, David. 2006. *Infrastructure as Catalyst for Regional Integration, Growth, and Economic Convergence: Scenario Analysis for Asia*. ADB Economics and Research Department Working Paper Series No. 91. Manila.

traditionally tended to focus most heavily on their respective countries.<sup>6</sup> External resources tend to be more involved with countries on an individual basis than with regions. In some interventions, while the diagnostic study or reference framework displays a regional approach, the project components and activities target national issues (footnote 4). While programs set out to focus on cross-border problems and promote regional advocacy, these often do not measure up to the regionality criteria and might as well have been implemented at the national level.<sup>7</sup>

- (xii) **Strike a balance between ownership and effectiveness.** Regional programs usually "respond" to needs of diverse countries and regional organizations, which makes the leaders of the region appreciate the external support and presence, but this may create a trade-off in terms of focus and effectiveness. There is a tendency to undertake activities across many countries, regional organizations, sectors, and topics, but, as useful as much of the work would be, these are more reactive than strategic. Therefore, there is a need to focus the program with a strategic perspective.<sup>8</sup> The Initiative for Integration of Regional Infrastructure in South America (IIRSA) focused on a limited set of projects to enable the setting of government priorities vis-à-vis its fiscal restrictions, ensure balanced public-private participation, and enhance execution possibilities.<sup>9</sup>
- (xiii) **There is no evidence that regionalization of programs produces cost efficiencies through "economies of scale."** Regional programs may even be less efficient because of additional complexity and additional layers of project management, and also because of the risk of over-emphasizing multicountry problems relative to problems that can be solved within each country (footnote 8). While the cost differential in preparing a regional program versus a nonregional program is not significant, regional programs require longer preparation times (2 or more years) to deal with multicountry analytical, institutional, and legal measures and to secure the commitment of all participating countries. Participation of country institutions from inception to implementation requires a clear delineation of responsibilities, an appropriate balance between national and regional responsibilities, and adequate linkages between these two levels.<sup>10</sup>
- (xiv) **Should there be graduated reduction in support or on exit strategy?** The European Union is experimenting with a graduated reduction in support over 5–7 years to the Caribbean Community Secretariat for project implementation. The issue of self-reliance is related to the presence of funding agencies in the region and their level of effort (footnote 8).
- (xv) **Avoid ambitious designs and timeframes.** Most regional programs do not carefully identify institutional and policy-making capacity gaps, nor do they often design measures to address identified gaps at both the national and regional levels. As a result, program objectives are too ambitious for the implementing capacities of the relevant national and regional institutions (footnote 10).

<sup>6</sup> Linn, Johannes F. 2006. *The Role of the Multilateral Institutions in Supporting Regional Cooperation and Integration in Central Asia: Some Practical Suggestions*. The Wolfensohn Institute, The Brookings Institution. Washington, DC.

<sup>7</sup> United Nations Development Programme (UNDP). 2007. *Evaluation of the UNDP's Second Regional Cooperation Framework for Asia and the Pacific: 2002–2006*. Evaluation Office. New York.

<sup>8</sup> Canadian International Development Agency. 2004. *Caribbean Regional Program Evaluation: Synthesis Report*. Performance Review Branch. Quebec.

<sup>9</sup> Website of IIRSA (<http://www.iirsa.org/>) and IIRSA technical support unit.

<sup>10</sup> World Bank. 2007. *The Development Potential of Regional Programs: An Evaluation of World Bank Support of Multicountry Operations*. Independent Evaluation Group. Washington, DC.

- (xvi) **Be conscious of cross-border social and environmental costs.** The Plan Puebla Panama initiative in Central America aims to develop ports, highways, airports and railways with the broad objective of developing petroleum, energy, manufacturing and agricultural industries. However, it has been criticized because of the resulting displacement of indigenous people and for not managing carefully the untoward effects of increased migration. It provides lessons on adopting a common strategy to ensure that all regional integration projects include sound social and environmental management practices and promote the conservation and sustainable use of natural resources.<sup>11</sup>

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<sup>11</sup> Information drawn from various sources, including <http://www.planpuebla-panama.org/> and [http://en.wikipedia.org/wiki/Plan\\_Puebla\\_Panama](http://en.wikipedia.org/wiki/Plan_Puebla_Panama)

## ECONOMIC ANALYSIS OF GREATER MEKONG SUBREGION ROAD AND POWER PROJECTS

### A. Background

1. This economic analysis uses the following road projects to analyze the economic benefits likely to be achieved on other Greater Mekong Subregion (GMS) road projects: (i) Phnom Penh–Ho Chi Minh City Highway; and (ii) East–West Corridor linking Kaysone Phomvihane in the Lao People’s Democratic Republic (Lao PDR) to Dong Ha in Viet Nam. These two projects are among the few GMS road projects completed, and they were the ones selected by GMS country delegates as first priority corridors.

2. The series of economic analyses carried out at appraisal as well as at completion of these projects concluded that the two road projects were highly economically justifiable as a whole, and for each road component. This meant that it was perceived as a win-win situation for Cambodia, Lao PDR, and Viet Nam. Approximately 10 years after the first project economic appraisal, this study reevaluates the economic analysis.

### B. Traffic Surveys

3. New traffic counts<sup>1</sup> were carried out March 2008 in Cambodia, Lao PDR, and Viet Nam. To the extent possible, traffic counts took place at the same locations<sup>2</sup> used previously. Daily averages could, without significant risk of error, be interpreted as annual average daily traffic (AADT) without recourse to expansion factors.<sup>3</sup> Traffic counts were recorded according to the vehicle classification<sup>4</sup> used by the Highway Development Management (HDM)-4 and the Road Economics Decision (RED) models. AADT was calculated with and without motorcycles.

#### 1. Cambodia

4. For the purpose of the economic analysis, AADT at Neak Leoung (after the ferry) was selected as the typical representative site along the Asian Development Bank stretch from Neak Leoung to Bavet (105 kilometers [km]). AADT without motorcycles of 2,449 is the figure used (Table A5.1).

**Table A5.1: Cambodia Annual Average Daily Traffic (2008)**

Item	MC	Car	Light Bus/Van	Medium Bus	Large Bus	Light Truck or Pick Up	Medium Truck	Heavy Truck	Articulated Truck	With MC	Without MC
<b>A. Neak Leoung RN11</b>											
Traffic count	5,810	521	178	33	6	107	225	230	15	7,125	1,315
<b>AADT</b>	<b>5,810</b>	<b>526</b>	<b>180</b>	<b>33</b>	<b>6</b>	<b>114</b>	<b>239</b>	<b>258</b>	<b>16</b>	<b>7,182</b>	<b>1,372</b>
<b>B. Neak Leoung RN1</b>											
Traffic count	7,248	894	655	30	44	241	247	240	20	9,615	2,367
<b>AADT</b>	<b>7,248</b>	<b>903</b>	<b>662</b>	<b>30</b>	<b>44</b>	<b>256</b>	<b>262</b>	<b>269</b>	<b>23</b>	<b>9,697</b>	<b>2,449</b>
<b>C. Bavet RN1</b>											
Traffic count	3,974	3,234	643	129	43	362	99	62	43	8,589	4,615
<b>AADT</b>	<b>3,974</b>	<b>3,266</b>	<b>650</b>	<b>129</b>	<b>43</b>	<b>384</b>	<b>105</b>	<b>70</b>	<b>47</b>	<b>8,668</b>	<b>4,694</b>
<b>Expansion Factor</b>	<b>1.00</b>	<b>1.01</b>	<b>1.01</b>	<b>1.00</b>	<b>1.00</b>	<b>1.06</b>	<b>1.06</b>	<b>1.12</b>	<b>1.08</b>		

AADT = annual average daily traffic, MC = motorcycle, RN = route national.

Note: RN11 traffic survey was conducted a few kilometers from the intersection between RN11 and RN1. RN1 at Neak Leoung was conducted at the entrance of the town in the direction of Svey Rieng, while the Bavet survey was conducted at the intersection with the special economic zone.

Source: Operations Evaluation Mission.

<sup>1</sup> Five-days, 18-hour traffic counts were carried out at least in three locations on all segments of the road projects.

<sup>2</sup> Locations were carefully selected in order not to register local urban traffic. It was not easy, however, to ensure that counts were conducted at the same locations as those used for previous reports. First, in quite a few of the referenced reports, there is no clear indication of the exact locations of traffic counts. Second, Cambodia, Lao PDR, and Viet Nam do not yet conduct regular traffic counts.

<sup>3</sup> Traffic surveys were conducted during weekdays and not on public holidays to avoid possible discrepancies. Information available confirms that March is a typical month. There is generally no traffic after midnight and, therefore, little need for the use of an expansion factor. Using information collected by the Japan International Cooperation Agency for the Road Master Plan for Cambodia, an expansion factor was proposed.

<sup>4</sup> Motorcycle, car, light bus/van, medium bus, large bus, light truck/pickup, medium truck, heavy truck, or articulated truck.

## 2. Lao People's Democratic Republic

5. In Table A5.2, AADT for the Lao PDR is presented at the two locations used for the economic analysis, km 25 from Kaysone Phomvihane on route national (RN) 9 before the Xeno intersection, and km 204 after the intersection of the gold/copper mine road leading to Vilabouly. Generally, pickups, jeeps, and special utility vehicles, which are counted in the light truck vehicles, are classified under cars. They account for 30% of the category or 97 vehicles. Therefore, for comparison purposes, a total of 113 vehicles were counted in the car category.

**Table A5.2: Summary of ADT in Both Directions Route National 9 – March 2008**

Vehicle Type	Location			
	Km 25 (scale measuring point)		Km 204 (after junction to Vilabouly District)	
	ADT	%	ADT	%
<b>Average daily traffic</b>	<b>2,281</b>	<b>100</b>	<b>2,012</b>	<b>100</b>
Motorcycle	814	36	1,277	63
<b>Average daily traffic of 4-wheel vehicles</b>	<b>1,467</b>	<b>64</b>	<b>735</b>	<b>37</b>
Car	204	9	16	1
Light bus/van	299	13	122	6
Medium bus	38	2	16	1
Large bus	47	2	26	1
Light truck/pick-up	574	25	324	16
Medium truck	182	8	129	6
Heavy truck	69	3	51	3
Articulated truck (loaded)	40	2	24	1
Articulated truck (empty)	14	1	26	1

ADT = average daily traffic, km = kilometer.

Source: Operations Evaluation Mission.

## 3. Viet Nam

6. In Viet Nam on RN9, there were three locations for the traffic surveys: at the border in Lao Bao; 15 km from the border near Khe Sanh; and along the South Dong Ha bypass, the additional work added to the original design. On the road from Ho Chi Minh City to Phnom Penh, there are three locations—national highway (NH) 22 at Hoc Mon, NH22 at Trang Bang, and near the Moc Bai border gate (Table A5.3).

**Table A5.3: Viet Nam Annual Average Daily Traffic (2008)**

Item	MC	Car	Mini Bus	Medium Bus	Large Bus	Light Truck	Medium Truck	Heavy Truck	Articulated Truck	With MC Total	Without MC Total
<b>A. East–West Corridor (NH9)</b>											
Lao Bao border	624	144	42	35	33	60	49	52	126	1,166	542
Khe Sanh (15 km from BCP)	3,006	343	377	228	149	334	323	249	63	5,070	2,064
South Dong Ha bypass	589	108	62	42	45	186	144	89	26	1,292	702
<b>B. Phnom Penh– Ho Chi Minh City Highway</b>											
NH22 Hoc Mon	38,171	5,808	1,608	402	1,094	776	5,236	2,091	470	55,655	17,485
NH22 Trang Bang	35,805	1,346	924	560	361	1,055	458	234	81	40,823	5,019
NH22 Moc Bai border	5,817	193	4	20	34	19	38	31	21	6,177	360

BCP = border-crossing point, MC = motorcycle, NH = national highway.

Source: Operations Evaluation Mission.

7. For the purpose of the evaluation of the Dong Ha–Lao Bao road (80 km), the Khe Sanh location was used. For the Phnom Penh–Ho Chi Minh City Highway Project, there are three components. For the first two (Viet Nam [V] 1 + V2), the location of Hoc Mon was used; and for the last component, the location of Trang Bang was used.

8. There is little traffic at Lao Bao–Donsavanh border and also at Moc Bai. The situation is different at Bavet. The traffic counts were not taken at the border. Traffic counts at the border



may not be useful because of the continuous movements of vans from the casinos coming to pick up customers.

### C. Annual Average Daily Traffic Over Time

9. Overtime, traffic grows and vehicle composition is likely to change. To get a measure of traffic growth and changes in vehicle composition, observed AADT can be compared to survey findings at the time of appraisal and at the time of the project completion report (PCR). Such a comparison is given in Table A5.4.

**Table A5.4: Comparison of AADT by Country over Time from Different Sources**

Item	MC	Car	Bus	Truck	Total With MC	Total Without MC
<b>Cambodia: Phnom Penh–Ho Chi Minh City Highway</b>						
Appraisal TA (1996)	4,161	572	140	355	5,228	1,067
Appraisal RRP (1996)	9,023	569	30	252	9,874	851
PCR (2005)	3,148	542	621	494	5,027	1,879
Consultant (2008)	7,248	903	736	810	9,697	2,449
<b>Viet Nam: Phnom Penh–Ho Chi Minh City Highway</b>						
V1 and V3 NH1						
Appraisal TA (1996)	23,653	703	878	5,904	31,138	7,485
Appraisal RRP (1996)	28,155	1,551	391	5,128	35,225	7,070
PCR (2005)	35,168	3,578	5,992	17,223	61,961	26,793
Consultant (2008)	38,171	5,808	3,104	8,103	55,186	17,015
V2 on NH22						
Appraisal TA (1996)	15,790	717	652	1,896	19,055	3,265
Appraisal RRP (1996)	19,765	1,038	261	1,628	22,692	2,927
PCR (2005)	16,728	2,692	1,909	5,710	27,039	10,311
Consultant (2008)	35,805	1,346	1,845	1,828	40,824	5,019
<b>Lao People's Democratic Republic: Route National 9 Phin–Dansavanh</b>						
Appraisal TA (1995)	60	15	19	106	200	140
Appraisal RRP (1997)	977	46	53	389	1,465	488
PCR (2006)	1,566	93	194	338	2,191	625
Consultant (2008)	1,277	113	164	458	2,012	735
<b>Viet Nam: National Highway 9</b>						
Appraisal RRP (1997)	1,477	56	65	480	2,078	601
PCR (2006)	1,362	256	539	352	2,509	1,147
Consultant (2008)	3,006	343	754	969	5,072	2,066

AADT = annual average daily traffic, MC = motorcycle, NH = national highway, PCR = project completion report, RRP = report and recommendation of the President, TA = technical assistance, V1 = Viet Nam 1, V2 = Viet Nam 2, V3 = Viet Nam 3.

Source: Operations Evaluation Mission.

10. However, such comparison needs to note that there could be discrepancies in survey locations and vehicle classification. The PCR does not indicate survey locations and in the case of the Phnom Penh–Ho Chi Minh City Highway in Viet Nam, traffic intensity was already high in the past and is now very high. As a result, the numbers are sensitive to the exact location of the traffic surveys. The main discrepancy in traffic flows between the results obtained here and the traffic flows used in the PCR is in relation to Viet Nam (NH1 and NH22), where recorded figures here (without motorcycles) are well below those used in the PCR.

### D. Traffic Forecasts

11. Reassessing the economic viability of road projects using current traffic observations implies revising the traffic forecasts. The purpose is not to propose a new traffic forecast based on a different set of assumptions, but rather to keep the same forecasting methodology of the previous evaluation reports, accounting for the consultant's traffic observations of March 2008.

12. Forecasting methodology adopted during appraisal followed common practice, with passenger demand (traffic) assumed to vary according to gross domestic product (GDP) per capita, population growth, and GDP passenger demand elasticity. Freight demand (traffic), on the other hand, was expected to vary according to GDP and GDP freight demand elasticity.

13. The set of growth rates used is given in Table A5.5. Consultant estimates before 2008 are calculated by interpolation between starting dates and 2008. After 2008, consultant estimates used the PCR/appraisal growth rates.<sup>5</sup>

**Table A5.5: Traffic Growth Rates (%)**

Item	MC	Car	Mini Bus	Medium Bus	Large Bus	Light Truck	Medium Truck	Heavy Truck	Articulated Truck
<b>A. Cambodia RN1 Phnom Penh–Ho Chi Minh City Highway</b>									
<b>Consultant growth rate (%)</b>									
Growth rate 2000–2005	10.0	10.6	12.7	0.0	0.0	13.0	12.0	12.0	12.0
Growth rate 2006–2008		18.5	4.4	20.0	20.0	3.0	1.0	1.0	1.0
Growth rate 2009–2013	6.0	8.4	8.4	8.1	8.1	8.4	7.9	7.9	7.9
Growth rate 2014 onward	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
<b>Appraisal growth rate (%)</b>									
Growth rate 1996–2000	11.3	4.5		18.8				15.0	
Growth rate 2001–2005	9.0	6.8		13.5				11.3	
Growth rate 2006–2010	7.7	7.0		8.4				7.0	
<b>PCR growth rate (%)</b>									
Growth rate 2005–2008	10.0	8.8	8.8	8.1	8.1	8.8	8.4	8.4	8.4
Growth rate 2009–2013	8.0	8.4	8.4	7.9	7.9	8.4	7.9	7.9	7.9
Growth rate 2014 onward	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
<b>B. Viet Nam Phnom Penh–Ho Chi Minh City Highway (NH1–NH22)</b>									
<b>Consultant growth rate (%)</b>									
Growth rate 1996–2008	5.1	13.9	13.9	11.8	11.8	4.4	4.4	4.4	4.4
Growth rate 2009–2013	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Growth rate 2014 onward	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
<b>Appraisal growth rate (%)</b>									
Growth rate 1996–2005	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
Growth rate 2005–2009	10.0	10.4	10.4	9.9	9.9	9.9	9.9	9.9	9.9
Growth rate 2009–2013	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Growth rate 2014 onward	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
<b>C. Viet Nam Phnom Penh–Ho Chi Minh City Highway (NH22)</b>									
<b>Consultant growth rate (%)</b>									
Growth rate 1996–2008	6.5	6.7	6.7	11.1	11.1	1.0	1.0	1.0	1.0
Growth rate 2009–2013	6.0	6.0	6.0	6.0	6.0	3.0	3.0	3.0	3.0
Growth rate 2014 onward	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
<b>Appraisal growth rate (%)</b>									
Growth rate 1996–2005	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
Growth rate 2005–2009	10.0	10.4	10.4	9.9	9.9	9.9	9.9	9.9	9.9
Growth rate 2009–2013	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Growth rate 2014 onward	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
<b>D. Viet Nam Lao Bao–Dong Ha (NH9)</b>									
<b>Consultant growth rate (%)</b>									
Growth rate 2003–2008	8.1	25.0	24.3	23.9	3.0	29.7	18.7	25.2	5.1
Growth rate 2009–2010	8.0	6.8	11.0	11.0	11.0	6.8	9.2	9.2	9.2
Growth rate 2011–2020	7.5	6.8	9.0	9.0	9.0	6.8	8.2	8.2	8.2
<b>Appraisal growth rate (%)</b>									
Growth rate 2000–2010	8.0	6.8	11.0	11.0	11.0	6.8	9.2	9.2	9.2
Growth rate 2011–2020	7.5	6.8	9.0	9.0	9.0	6.8	8.2	8.2	8.2
<b>E. Lao PDR Route National 9</b>									
<b>Consultant growth rate (%)</b>									
Growth rate 2000–2008	10.4	11.6	16.0	13.0	13.0	1.0	1.0	1.0	1.0
Growth rate 2009–2010	10.4	11.6	5.3	5.3	5.3	8.2	8.2	8.2	8.2
Growth rate 2010–2020	10.2	11.6	7.2	7.2	7.2	8.2	8.2	8.2	8.2
<b>Appraisal growth rate (%)</b>									
Growth rate 2001–2010	10.4	11.6	5.3	5.3	5.3	8.2	8.2	8.2	8.2
Growth rate 2011–2020	10.2	11.6	7.2	7.2	7.2	8.2	8.2	8.2	8.2

Lao PDR = Lao People's Democratic Republic, MC = motorcycle, NH = national highway, PCR = project completion report, RN = route national.

Source: Operations Evaluation Mission.

<sup>5</sup> Growth rates for the starting date to 2008 are often less than growth rates envisaged at appraisal, because expected traffic did not yet materialize. In the long run, the consultant is confident that the proposed growth rates remain valid with coming improvements like the bridge on the Mekong in Cambodia and the special economic zone in Kaysone Phomvihane.

14. A summary of traffic forecasts is presented in Table A5.6. Vehicle traffic by type is presented for all road projects for the starting year—2000 (Phnom Penh–Ho Chi Minh City), 2001 (Lao PDR), or 2003 (Viet Nam)—and for the ending year (2019, 2020, or 2022).

**Table A5.6: Summary of Traffic Forecasts**

Item	Car	Mini Bus	Medium Bus	Large Bus	Light Truck	Medium Truck	Heavy Truck	Articulated Truck	Total
<b>A. Cambodia RN1 Phnom Penh–Ho Chi Minh City Highway</b>									
1. 2000	327	319		40	151	349			1,186
2. 2019 Consultant	1,917	1,406	63	84	516	512	498	41	5,037
3. 2019 Appraisal	1,482	1,589		105	607	1,305			5,088
<b>B. Viet Nam NH1 Phnom Penh–Ho Chi Minh City Highway</b>									
1. 2000	2,610		611			6,092			9,313
2. 2019 Consultant	12,100	3,346	837	2,278	1,614	10,909	4,355	975	36,414
3. 2019 Appraisal	11,011		2,726			35,749			49,486
<b>C. Viet Nam NH22 Phnom Penh–Ho Chi Minh City Highway</b>									
1. 2000	1,345		397			1,694			3,436
2. 2019 Consultant	2,555	1,753	1,063	685	1,736	754	384	133	9,063
3. 2019 Appraisal	6,846		1,691			10,545			19,082
<b>D. Lao PDR RN9 East–West</b>									
1. 2001	51	43	7	11	185	119	47	44	507
2. 2020 Consultant	413	271	36	58	590	335	131	129	1,963
3. 2020 Appraisal	413	124	20	34	885	566	227	208	2,477
<b>E. Viet Nam NH9</b>									
1. 2001	112	127	78	128	91	137	81	49	803
2. 2022 Consultant	860	1,307	789	515	838	991	764	193	6,257
3. 2022 Appraisal	391	742	455	747	318	653	386	234	3,926

Lao PDR = Lao People's Democratic Republic, NH = national highway, RN = route national.

Source: Operations Evaluation Mission.

## E. New Economic Assessment of the Two Road Projects

15. Findings from economic analyses are very sensitive to traffic intensity forecasts, assumptions on international roughness index (IRI),<sup>6</sup> and vehicle operating costs (VOCs). These background details are often not fully available and suggest caution when comparing economic internal rate of return (EIRR) and net present value (NPV) results from previous sources.

16. To carry out economic analyses, a set of parameters has to be defined, and those used here are summarized in Table A5.7. They are a combination of consultant assumptions and real observations collected by local consultants during March 2008. They also make use, after updating, of assumptions used by previous analyses when available. The economic analysis of the two road projects has been conducted using HDM-4 for the calculations of VOC, and RED<sup>7</sup> for the complete economic evaluation.

<sup>6</sup> It is ironic that road economic evaluation software like HDM-4 and RED are sensitive to IRI assumptions, which often are the result of broad engineering guessing generally not supported by regular road roughness surveys. It is not that engineers cannot get an estimate of the road roughness at a point in time when doing visual inspection. The problem comes more from the common nonscientific technique used when coming up with an aggregate figure for a specific stretch of road when carrying out project evaluation.

<sup>7</sup> The RED model was originally developed by the Sub-Saharan Africa Transport Policy Program sponsored by the World Bank. HDM-4 software is the successor of the HDM-3 (highway design and maintenance) model originally developed by the World Bank and now managed by a consortium.

**Table A5.7: Parameters for Economic Analyses**

Parameter	Assumption and Comment
Construction cost	Financial costs came from the PCR looking at contract value and allocating to the road only the relevant costs, including their share of supervision and resettlement. Construction costs were adjusted to 2008 prices using price adjustment factors.
Vehicle operating cost (VOC)	Surveys were conducted in Cambodia, Lao PDR, and Viet Nam to obtain market and economic prices of VOC components reflecting the 2008 price situation. It was decided to use two sets of tables: VOC Cambodia/Lao PDR and VOC Viet Nam. Fuel prices are higher than figures used in the PCR, but lower than the latest price hike of the barrel of oil on the world market. VOCs in Cambodia/Lao PDR are higher than VOC Viet Nam largely because of fuel prices. <sup>a</sup>
International roughness index (IRI)	IRI were extracted from previous reports (RRP or PCR) and confirmed by consultant interviews and visual inspection. <b>Phnom Penh–Ho Chi Minh City Highway Project</b> RN1 (Cambodia): IRI = 7.0 meter per kilometer (m/km) without project and IRI = 2.2 m/km with project (very good road); NH22 (Viet Nam): IRI = 5.8 m/km without project and IRI = 2.2 m/km with project; and NH1/1A (Viet Nam): IRI = 3.7 m/km without project and IRI = 2.2 m/km with project. <b>East–West Economic Corridor Project</b> RN9 (Lao PDR) Phin–Border: IRI = 11.8 without project and IRI = 2.5 with project; RN9 (Lao PDR) Kaysone Phomvihane–Xeno: IRI = 3.7 m/km without project and IRI = 2.0 m/km with project; and NH9 (Viet Nam) IRI = 5.8 m/km without project and IRI = 2.2 m/km with project.
Traffic forecast	Two types: forecasts adjusted for observed 2008 traffic counts and forecasts non-adjusted, both growing using growth rates defined in the PCR (and appraisal).
Generated traffic	RED for generated traffic gives the choice between a percentage of normal traffic or a calculation based on demand VOC elasticity. This method was retained, with elasticity (along PPTA suggestions) retained as 1.0 for passenger vehicles and 0.5 for freight vehicles.
Conversion factor (CF)	CFs to adjust financial costs to economic costs; SCF varies among reports. For standardization, it has been decided to apply for Cambodia, Lao PDR, and Viet Nam SCF = 0.85.
Diverted traffic	Volume of diverted traffic is presently low to nonexistent. Based on information collected in interviews, some minimum diversion effect has been assumed for Cambodia and Lao PDR.
Value of time (passengers)	Value of time (\$/hour) for passengers varying if working or nonworking hours, with nonworking hours being one third of value of working hours. At appraisal, working value varied between \$0.45 and \$0.50; at PCR (2007) value used was \$0.76. Value for passenger cars has been assumed to be \$1, and for bus passengers \$0.50.
Value of time of cargo	Value of cargo delay has been estimated at \$0.40/vehicle-hour based on 8% interest (real) rate, 1,750 working hours, and average value of truck load \$1,000/ton for a 10 ton truck. Value is \$0.20 for medium truck and \$0.80 for articulated truck.
Road maintenance expenditure	In 2002, Cambodian MPWT was spending on road maintenance on national roads a maximum of \$1,000/km, which converts to \$1,300 in 2007 (routine and minor repairs). Maintaining current situation without road project requires more than \$1,300 and was assumed by the PCR to be \$4,000/km. For road project, \$1,500/km is assumed sufficient for routine maintenance.
Road accidents	No systematic data exist. Clear accident reductions are only reported in Viet Nam (reduction by half) and assumed value of \$1,000 per accident was selected. Elsewhere, no benefits from road safety are assumed.

Lao PDR = Lao People's Democratic Republic, MPWT = Ministry of Public Works and Transport, NH = national highway, PCR = project completion report, PPTA = project preparatory technical assistance, RED = road economics decision, RN = route national, RRP = report and recommendation of the President, SCF = standard conversion factor.

<sup>a</sup> The selected economic cost fuel price for Cambodia/Lao PDR was chosen as \$0.58/liter, which corresponds to an oil price of \$80 per barrel prevailing at that time with a 15% refinery charge. Viet Nam, being an oil producer, has a lower economic price of \$0.52/liter. The PCR of Phnom Penh–Ho Chi Minh City used \$0.39/liter, which, adjusted for a price rise at the pump, gives \$0.48/liter in 2008. However, this is a conservative estimate for the long-run price of oil.

Source: Operations Evaluation Mission.

17. The calculations are in constant 2008 prices.<sup>8</sup> This applies to VOCs, which reflect an average of 2007–2008 (1st quarter) prices. For consistency, construction costs<sup>9</sup> have also been adjusted by a price factor using the country consumer price index (CPI).<sup>10</sup>

18. Estimated VOCs using HDM-4 are presented in Table A5.8 with comparisons of VOCs from previous studies.

**Table A5.8: Summary of VOC Comparisons**

Vehicle Type	Consultant				PCR		Consultant				PCR			
	Cambodia RN1		Viet Nam NH22		RN1 + NH22 + NH1A		Lao PDR RN9		Viet Nam NH9		Lao PDR RN9		Viet Nam NH9	
	VOC \$/veh-km IRI = 2.2	VOC \$/veh-km IRI = 7	VOC \$/veh-km IRI = 2.2	VOC \$/veh-km IRI = 6.0	VOC \$/veh-km IRI = 2.0	VOC \$/veh-km IRI = 4.0	VOC \$/veh-km IRI = 2.5	VOC \$/veh-km IRI = 11.8	VOC \$/veh-km IRI = 2.2	VOC \$/veh-km IRI = 5.8	VOC \$/veh-km IRI = 2.2	VOC \$/veh-km IRI = 11.8	VOC \$/veh-km IRI = 2.2	VOC \$/veh-km IRI = 5.0
Car Medium	0.23	0.25	0.20	0.22	0.15	0.28	0.23	0.29	0.20	0.22	0.19	0.28	0.22	0.25
Bus Light	0.21	0.23	0.19	0.20			0.21	0.26	0.19	0.20	0.19	0.23	0.25	0.31
Bus Medium	0.35	0.43	0.30	0.36	0.17	0.23	0.36	0.53	0.30	0.35			0.66	0.70
Bus Heavy	0.46	0.53	0.34	0.40	0.30	0.41	0.46	0.64	0.34	0.40	0.27	0.32	0.90	0.96
Truck Light	0.18	0.20	0.17	0.18	0.12	0.17	0.18	0.23	0.17	0.18	0.37	0.47	0.23	0.28
Truck Medium	0.29	0.32	0.25	0.27	0.21	0.27	0.29	0.37	0.25	0.27	0.42	0.56	0.32	0.41
Truck Heavy	0.58	0.64	0.47	0.52	0.37	0.51	0.58	0.74	0.47	0.52	0.52	0.67	0.51	0.63
Truck Articulated	0.77	0.86	0.64	0.70			0.78	1.01	0.64	0.70	0.77	1.03	0.84	1.08

IRI = international roughness index, km = kilometer, Lao PDR = Lao People's Democratic Republic, NH = national highway, PCR = project completion report, RN = route national, veh = vehicle, VOC = vehicle operating cost.

Source: Operations Evaluation Mission.

The numbers in Table A5.8 from the Phnom Penh–Ho Chi Minh City Highway PCR are very questionable in terms of level and variations according to IRI. Numbers from the East–West Economic Corridor<sup>11</sup> PCR are more in line with our suggested estimates. Average suggested VOC savings for Phnom Penh–Ho Chi Minh City Highway is 9–10%, and 9–22% for the East–West Economic Corridor.

## F. Limitations of the Economic Analysis

19. There are limitations to the economic analysis here from the use of the RED model. The advantages of the RED are its simplicity; capacity to account for normal, diverted, and generated traffic; capacity to account for time savings and external benefits; use of HDM-4 for VOCs; and finally a quick display of useful tables of outputs in Excel format. The disadvantages are in the constrained format of the software: (i) construction periods cannot go over 3 years, (ii) road benefits start only in the year following full completion of the road, (iii) value of time is fixed for the whole period, (iv) evaluation period is fixed at 20 years; (v) no possibility to enter an end of period value for road asset; (vi) traffic grows according to a series of vehicle growth rates defined along periods of 5 years, and (vii) no capacity to account for reductions in congestion.

20. RED has been designed to help economic analysis of rural and semirural roads, not urban roads. Despite the above, RED and the use of HDM-4 for VOCs were judged sufficiently reliable to reassess the road projects with a certain margin of error.

## G. Summary of Findings

21. Findings from the different simulations using RED are summarized in Table A5.9. The discount rate for the NPV is 12%.

<sup>8</sup> In reality, many prices are 2007, and therefore constant prices should be called 2007–2008 constant prices.

<sup>9</sup> Construction was spread over many years, with some even in 2006, so a proper construction price index was not readily available. The CPI has been used instead, but this could introduce a bias, because the construction industry is very competitive, and prices will generally not follow the CPI so closely, which is dominated by fuel and food price changes.

<sup>10</sup> Cambodia: 1.2; Lao PDR: 1.146; Viet Nam (NH9): 1.07; and Viet Nam (NH22): 1.26.

<sup>11</sup> Their estimation methodology is rather simple, since it adjusts the report and recommendation of the President VOCs with a standard annual inflation rate of 3%.

**Table A5.9: EIRR and NPV Comparison**

Road Project	EIRR (%)	NPV (12%) in \$ million	Appraisal EIRR (%)	PCR EIRR (%)
<b>A. Phnom Penh–Ho Chi Minh City Highway</b>				
<b>1. Cambodia</b>				
a. RN1 (Consultant)	12	(0.11)	22	24.10
b. RN1 (Appraisal/PCR)	13	1.5		
<b>2. Viet Nam</b>				
a. NH22 (Consultant)	11	(3.32)	18	25.40
b. NH22 (Appraisal/PCR)	14	4.44		
c. NH1A (Consultant)	(2)	(36.4)	34	28.70
d. NH1A (Appraisal/PCR)	(1)	(34.5)		
<b>B. East–West Corridor</b>				
<b>1. Lao PDR</b>				
a. RN9 (Consultant)	13	1.56	16 (19 <sup>a</sup> )	20.60
b. RN9 (Appraisal/PCR)	14	2.92		
<b>2. Viet Nam</b>				
a. NH9 (Consultant)	16	6.01	16 (23 <sup>a</sup> )	17.60
b. NH9 (Appraisal/PCR)	14	1.97		

EIRR = economic internal rate of return, Lao PDR = Lao People's Democratic Republic, NH = national highway, NPV = net present value, PCR = project completion report, RN = route national.

<sup>a</sup> With additional regional trade traffic benefits.

Source: Operations Evaluation Mission.

22. The new economic analysis reflects the observed traffic situation, with growth prospects after 2008 identical to what was envisaged at appraisal and in the PCR. In Table A5.9, the two first columns of figures are the EIRR and NPV from the consultant's estimation. The last two columns give results from the original appraisal and the PCR. With this new set of figures, several road projects on the two corridors are now marginal, being around the threshold of 12%, but with the East–West Economic Corridor faring better than the Phnom Penh–Ho Chi Minh City Highway.

#### H. Net Economic Benefits for Each Participating Country

23. Tables A5.10–A5.11 summarize the net economic benefits for each participating country for the Phnom Penh–Ho Chi Minh City Highway Project. Costs and benefits are expressed in economic terms and discounted by a 12% rate.

**Table A5.10: Benefit Distribution of Phnom Penh–Ho Chi Minh City Highway Project**

Item	Total Project (\$ million)	Cambodia RN1 (\$ million)	Viet Nam NH22 (\$ million)
Discounted economic cost	55.83	23.35	32.48
Discounted economic benefits	52.39	23.24	29.15
Net economic benefits	(3.44)	(0.11)	(3.33)
B/C	0.94	1.00	0.90
EIRR	11%	12%	11%

B/C = benefit/cost ratio, EIRR = economic internal rate of return, NH = national highway, RN = route national.

Note: NH1 and additional works not included.

Source: Operations Evaluation Mission.

24. Table A5.11 presents the same findings for the East–West Economic Corridor.

**Table A5.11: Benefit Distribution of the East–West Corridor Project**

<b>Item</b>	<b>Total Project</b> (\$ million)	<b>Lao PDR RN9</b> (\$ million)	<b>Viet Nam NH9</b> (\$ million)
Discounted economic cost	29.11	15.43	13.68
Discounted economic benefits	36.68	16.99	19.70
Net economic benefits	7.58	1.56	6.02
B/C	1.26	1.10	1.44
EIRR	15%	13%	16%

B/C = benefit/cost ratio, EIRR = economic internal rate of return, Lao PDR = Lao People's Democratic Republic, NH = national highway, RN = route national.

Note: Kaysone Phomvihane–Xeno and additional works in Viet Nam not included.

Source: Operations Evaluation Mission.

## I. Conclusions

25. At appraisal and in the PCR, the Phnom Penh–Ho Chi Minh City Highway and the East–West Economic Corridor were both rated highly economically justifiable, with EIRRs over 20% for the whole project and for each component. The recalculated economic analysis was carried out with new prices for VOC and construction, and new traffic surveys. This gives a very different picture, as traffic has not been growing according to expectation in Viet Nam. Traffic is still predominantly local, with international traffic slow to develop. The Cross-Border Transport Agreement is not yet fully implemented; and under these new conditions, the two road projects do not come out as strongly as at appraisal. Nonetheless, only one of the projects—NH22 (and a short NH1A segment)—has an EIRR below 12% and, hence, a negative NPV. Given the oil fuel price used here, these can be seen as conservative minimum level estimates, and a less conservative long-run oil price would probably make these projects nonmarginal.

## J. Theun–Hinboun and Nam Leuk Hydropower Projects

26. The recalculations for the financial and economic analysis of Theun–Hinboun and Nam Leuk Hydropower projects follow the basic model adopted in their project performance audit reports (PPAR). The reestimation of the financial internal rate of return (FIRR) and the EIRR was carried out on an incremental basis. All prices and costs are expressed in first quarter 2008 constant values and expressed in US dollars. The World Bank unit value manufacturing index was used as a proxy for world price movements and was used to convert all prices to a 2008 base. The FIRRs were evaluated by comparing revenues and costs during the assumed economic life of the projects. The exchange rate for the first quarter of 2008 was KN8,900 per dollar. The main parameters used in the analysis for the two reports are discussed below.

27. **Theun–Hinboun Hydropower Development Project.** The project's investment cost (total project costs without interest during construction and loan service charges) was established at \$240 million in current prices. The economic cost is \$271 million at constant 2008 prices. The project was assumed to have an economic life of 25 years from 1998, the time it started operations and depreciation was applied on a straight line basis. This is the same assumption in the PPAR and the PCR, although based on the actual state of the facilities during the Operations Evaluation Mission, this estimate appears to be a very conservative estimate. All data used until the first quarter of 2008 are actual data. Royalty payments to the Government are taken at 5% of revenue, while profit taxes are taken at 15% of revenue from 2009. Actual tax payments were used from 2005 to 2008. The energy generated is assumed to remain at the 2008 level until 2010 when Nam Theun 2 is expected to become operational.

28. The project's original financing structure is shown in Table A5.12. Equity of \$110.0 million came from investments by Electricité du Laos (EdL), Nordic Hydropower, and MDX Lao Public Co. Ltd. Part of EdL's equity (\$51.1 million) was sourced from ADB by the Government and on-lent to EdL at 6.21% with a grace period of 5 years and a repayment period of 25 years. Nordic Hydropower, a foreign company, has offices in the Lao PDR and operates Theun–Hinboun Public Company. The Government loan from ADB of \$6.6 million was on-lent to Theun–Hinboun at an interest rate of 10% and a repayment period of 16 years, including a grace period of 4 years.

**Table A5.12: Sources of Financing**

Source	\$ million
<b>Equity</b>	
Electricité du Laos	66.0
Nordic Hydropower <sup>a</sup>	22.0
MDX Lao Public Co. Ltd. <sup>b</sup>	22.0
<b>Subtotal</b>	<b>110.0</b>
<b>Debt</b>	
Government <sup>c</sup>	6.6
Commercial Loan	56.2
Export Credit	67.4
<b>Subtotal</b>	<b>130.2</b>

<sup>a</sup> Owned by Statkraft SF, Norway and Vattenfall AB, Sweden that operates the Theun Hinboun Power Plant.

<sup>b</sup> Foreign company based in Thailand.

<sup>c</sup> Loan from Asian Development Bank.

Source: Project completion report.

29. The FIRR for the Project is recalculated to be 22%. The high return to the project is due principally to a guaranteed long-run export price and access to relatively low cost loans to cover EdL's equity contribution. The return appears better than at appraisal and in the PPAR largely because of the impact of adjusting to 2008 prices, since the long-run contract price rises faster than the unit value manufacturing index and, hence, dollar revenues rise in real terms in the real calculation.

**Table A5.13: Financial Internal Rates of Return  
Theun–Hinboun Hydropower Project (%)**

Appraisal	PCR	PPAR	Recalculation
18.7	19.5	17.0	21.7

PCR = project completion report, PPAR = project performance audit report.

Source: Operations Evaluation Mission.

30. Table A5.14 gives the distribution of financial gains to the project investors. Of the total financial NPV at 12% of \$143.75 million, the bulk goes to EdL and Nordic Hydropower. They gain the difference between the discounted value of their equity investment and the discounted value of dividends they receive. Both are recipients of government loans and, hence, gain proportionately more than MDX. The project lenders are shown to have close to zero net gains as their loans are at a 12% interest rate and returns net out when a 12% discount rate is used to compare the present value of the loan and of loan repayments.



**Table A5.14: Distribution of Project Net Benefits (\$ million)**

<b>Shareholders</b>	<b>NPV Financial before Tax at 12%</b>	<b>Gains to Lao PDR</b>	<b>Gains to Thailand</b>	<b>NPV Subregion Economic at 12%</b>
EdL <sup>a</sup>	90.66	90.66		90.66
Nordic Hydropower <sup>b</sup>	32.03			
MDX <sup>c</sup>	9.62		9.62	9.62
Government <sup>d</sup>	10.18	10.18		10.18
Of which				
ADB Loan	(26.36)			
Taxes and Royalties	36.54			
Lenders: Export Credit <sup>e</sup>	0.62			
Lenders: Commercial Loan <sup>e</sup>	0.62			
Consumers <sup>f</sup>		2.28	50.27	52.55
<b>Total NPV</b>	<b>143.75</b>	<b>103.12</b>	<b>59.89</b>	<b>160.75</b>
<b>IRR</b>	<b>21.70%</b>	<b>28.21%</b>	<b>39.37%</b>	<b>32.03%</b>

EdL = Electricité du Laos, IRR = internal rate of return, Lao PDR = Lao People's Democratic Republic, NPV = net present value.

<sup>a</sup> EdL gains 60% of dividends plus the subsidy from the ADB loan, which is on-lent from the government to cover its equity.

<sup>b</sup> Nordic Hydropower gains the difference between the present value of its equity and the present value of dividends. These are treated as extra regional benefits.

<sup>c</sup> MDX gains the difference between the present value of its equity and the present value of dividends. MDX is a Thai-owned company and its income is treated as a regional benefit.

<sup>d</sup> The government gains the present value of taxes and royalties and loses the difference between the present value of the ADB loan and the present value of loan repayments (that is the loan subsidy).

<sup>e</sup> Lenders gain the difference between the present value of the loan and the present value of repayments. These are treated as extra regional benefits. However, as the interest rate applied is 12%, the discounted value is close to zero.

<sup>f</sup> Consumers in Thailand gain the difference between the contract export price and the cost of domestic thermal-based supply.

Source: Operations Evaluation Mission.

31. The EIRR for the project is recalculated to be 32% above the result at appraisal although close to that in the PCR and well above the 12% test rate used by ADB. The difference between the EIRR and FIRR is that the economic is defined as the return to the GMS, covering gains to both Lao PDR and Thailand but not to foreign investors or lenders. MDX is treated as a Thai-based company and so gains to it are included in the economic return. In addition, importantly, the impact of the project on the power market in Thailand is considered. Sales are treated as non-incremental consumption in Thailand and are taken to replace higher cost and environmentally less-friendly thermal sources. In the economic analysis, therefore, the difference between the cost of the thermal source and the export price from the project is taken as a form of consumer surplus benefit to Thai consumers. An approximate thermal cost of \$0.05/kilowatt-hour (kWh) taken from the Nam Theun 2 report and recommendation of the President (RRP) is converted to 2008 prices and used as cost of alternative supply. Over the life of the project, some of this surplus may be captured by power producers through higher electricity tariffs in Thailand, but the net gain is shown as a benefit to consumers.

**Table A5.15: Economic Internal Rates of Return  
Theun–Hinboun Hydropower Project (%)**

<b>Appraisal</b>	<b>PCR</b>	<b>PPAR</b>	<b>Recalculation</b>
24	31	19	32

PCR = project completion report, PPAR = project performance audit report.

Source: Operations Evaluation Mission.

32. Approximately, two thirds of the subregional gain accrue to the Lao PDR and most of these will go to the public sector as the government collects taxes and royalties and owns EdL. In principle, therefore, it is available for reinvestment in the economy. It is assumed that the ADB loan to the project would have gone to the country anyway and thus has a domestic opportunity cost, which is approximated by the 12% discount rate. The foreign investment and foreign loans are treated as project specific. One third of the benefits accrue to Thailand who has access to a cheaper energy supply source and thus this appears a genuine regional cooperation project with gains to both participating countries.

### **K. Nam Leuk Hydropower Development Project**

33. The EIRR and NPV of this project were recalculated with all costs adjusted to 2008 constant prices. In this case, the financing arrangements are simpler and hence the distributional analysis is less complicated. The project is wholly owned by the government of the Lao PDR through EdL. Its primary focus is the domestic market although, in the early years before Nam Theun 2 comes on stream, there were some exports to Thailand. As well as adjusting price data and using actual capital costs, the recalculation adjusts for higher than planned transmission and distribution losses. Capital costs at appraisal, excluding interest during construction and loan servicing, were estimated at \$100.3 million in current prices. Economic costs used here are \$120.5 million at 2008 prices. Actual data collected from EdL show that generation was lower and transmission and distribution losses higher than assumed at appraisal and the PPAR stage. This data was incorporated here by assuming long-term capacity of 227 gigawatt-hours per year, with 1.35% transmission losses and distribution losses of 14.8% decreasing to 12.1% from 2020. The key difference with the PPAR assumption is that the PPAR assumed a capacity of 246 gigawatt-hours and transmission losses of 1%.

34. For the initial financial recalculations, the actual 2008 domestic and export tariffs are projected over the life of the project by assuming they are constant in real terms. For the economic analysis, the export sales to Thailand are valued at the export price. However, as in the case of Theun–Hinboun, there is also a regional consumer surplus benefit to consumers in Thailand as power from the Lao PDR is cheaper than thermal sources in Thailand. As before, per unit gain is the difference between the thermal cost in Thailand and the export price. Domestic sales of electricity, which comprise the bulk of output, are divided between incremental and non-incremental output. Incremental sales are by far the largest and are valued at an estimated willingness to pay price. This is taken as the simple average of the replacement cost of electric power from the grid of \$0.12/kWh (through kerosene lighting and private diesel generators, for example) and the actual tariff. This average willingness to pay price is approximately \$0.87 per kWh. The non-incremental electricity use is assumed to have occurred without the project, with the marginal supply source imports from Thailand. The per unit cost of electricity imports in 2005 is about \$0.06/kWh from the Nam Theun 2 RRP, which is converted to 2008 prices.

35. The economic returns on this basis give an EIRR for the subregion as whole of 10%, which is close to that found in the PCR and at appraisal, but lower than in the PPAR. The difference is due chiefly to the higher assumed losses used here, due to observation of actual operations. The FIRR before tax is 4%. The weighted cost of funds for the project is estimated at 4% so there should be an adequate margin for loan repayments, but not for tax. However, the willingness to pay estimate implies there is considerable consumer surplus in the Lao PDR, which could be tapped through tariff increases, should the financial viability of the project come into question. As the tariff is raised toward the willingness to pay estimate, the FIRR will approach the EIRR. For this project, at a 12% discount rate, there are positive returns to consumers in both countries, although as the overall EIRR is below 12% the NPV is negative for the Lao PDR.

**Table A5.16: Economic Internal Rates of Return  
Nam Leuk Hydropower Project (%)**

Appraisal	PCR	PPAR	Recalculation
14	10	12	10

PCR = project completion report, PPAR = project performance audit report.  
Source: Operations Evaluation Mission.

36. It should be noted that the EIRR estimate for the subregion is a conservative estimate, since it is based on the assumption that the real value of energy and willingness to pay for it, will remain constant in real terms in the Lao PDR over the next 25 years. Any real rise in the scarcity value of energy will improve both the EIRR and the FIRR above that given here. Furthermore, any improvement in project efficiency in terms of reducing generation, transmission, and distribution losses will also improve the returns to the project.

**Table A5.17: Distribution of Project Net Benefits  
Nam Leuk Hydropower Project (\$ million)**

Shareholders	NPV Financial before Tax at 12%	Gains to Lao PDR	Gains to Thailand	NPV Subregion Economic at 12%
EdL <sup>a</sup>	(51.8)	(51.8)		(51.8)
Consumers Lao PDR <sup>b</sup>		25.2		25.2
Consumers Thailand <sup>c</sup>			9.6	9.6
<b>Total NPV</b>	<b>(51.8)</b>	<b>(26.6)</b>	<b>9.6</b>	<b>(17.0)</b>
IRR	4.3%			9.7%

EdL = Electricité du Laos, IRR = internal rate of return, Lao PDR = Lao People's Democratic Republic, NPV = net present value.

<sup>a</sup> EdL bears all the costs of the project and has return of below 12%, hence, the negative NPV. EdL is not distinguished here from the government of Lao PDR, so no separate tax payments are identified.

<sup>b</sup> Consumers in the Lao PDR gain the difference between estimated willingness to pay and the tariff (for incremental consumption) and between the import cost and the tariff (for non-incremental).

<sup>c</sup> Consumers in Thailand gain the difference between the cost of the thermal alternative and the export price.

Source: Operations Evaluation Mission.

## EXPECTED REGIONAL COOPERATION IMPACTS AND OUTCOMES IN THE GMS LOANS

1. Based on a project count of 26, about 81% of the Greater Mekong Subregion (GMS) projects identified outcomes that concerned regional cooperation,<sup>1</sup> although only 73% had identified specific indicators of performance (Table A6.1). These outcome indicators identified mainly target values (54%) either upon project completion or some years after completion. Only 12% contained baseline values in the project document.

**Table A6.1: Regional Cooperation Outcomes and Impacts in GMS Projects:  
Share of Total Number<sup>a</sup> of GMS Projects (%)**

Item	With Outcome/Impact on Regional Cooperation	With Performance Indicator	With Baseline Value	With Target Value
Outcomes	80.8	73.1	11.5	53.8
Impacts	80.8	61.5	7.7	26.9

GMS = Greater Mekong Subregion, RRP = report and recommendation of the President.

<sup>a</sup> Loans that share the same RRP, but were assigned different loans numbers (either due to ordinary capital resources-Asian Development Fund distinction or country distinction) are counted as one. Therefore, the total number of projects used here (26) is less than the total number of GMS loans (32). Every project that has at least one item is counted, e.g., a project that has more than one outcome/impact and indicator will be counted only once.

Sources: RRP's for the various loans.

2. While about the same number of GMS projects included impacts involving regional cooperation (81%), those that identified a measurable gauge of project impact were much less compared with outcomes. Only 62% spelled out impact indicators, with 8% and 27% adopting baseline and target values, respectively.

3. The preceding discussion considered at most one outcome or impact per project, even if some projects reflected more than regional cooperation outcome or impact, in order to establish whether the project proponents had really intended the project to contribute to subregional cooperation. The pattern from Table A6.1 suggests that regional cooperation was an explicit goal and purpose for only 81% of the GMS projects identified by the GMS Secretariat. The projects that did not expressly incorporate regional outcomes and impacts tend to be those approved prior to 1999.

4. In contrast, the data in Table A6.2 used all the regional cooperation result indicators (53 for outcomes and 32 for impacts) as the basis for comparison, to determine whether loan designs had selected measurable results for subregional activities. Slightly more than half of the outcome indicators (55%) had end-targets, compared with about one third of the impact indicators. Less than 10% of the outcome and impact indicators specified starting points. These rates imply that anticipated results regarding regional cooperation tend to have generally worded indicators, with few quantified values.

**Table A6.2: Regional Cooperation Performance Indicators in GMS Projects:  
Share of Total Number<sup>a</sup> of GMS Projects (%)**

Item	With Performance Indicator	With Baseline Value	With Target Value
Outcomes	100.0	9.4	54.7
Impacts	100.0	9.4	34.4

GMS = Greater Mekong Subregion.

<sup>a</sup> The divisors used in computing the shares are the total number of performance indicators for regional cooperation outcomes (53) and impacts (32) identified, and are no longer pegged to the number of projects.

Sources: Reports and recommendation of the President for the various loans.

<sup>1</sup> The rest had discussed only national-level outcomes and impacts.