No.

The Research on the Cross-border Transportation Infrastructure: Phase 2

Final Report

December 2007

Japan International Cooperation Agency
ALMEC Corporation

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PREFACE

In 2003, the Japan International Cooperation Agency (JICA) conducted the “Research on the Experience and Perspective of ODA on Infrastructure Development in the Developing Countries.” It redefined the role of infrastructure and identified the issues in infrastructure development for future JICA assistance.

Based on the study’s results, two researches were then conducted, namely the “PPP (Public-Private Partnership) Project Study” in 2004 and the “Research on Program Management: Guide for the Application of P2M to JICA Activities,” from 2003 to 2005 with the aim of reducing the infrastructure gap and taking an integrated approach in infrastructure development. Since cross-border infrastructure was identified as one of the solutions to reduce infrastructure gaps, the research on cross-border transportation infrastructure was conducted from October 2005 to July 2006 under Phase 1. It examined the progress of regionalization from a global perspective and summarized the major characteristics of cross-border transport infrastructure.

Phase 2, or this study, was implemented from November 2006 to December 2007, further analyzing cross-border transport infrastructure based on the results of Phase 1. Discussions were done in nine research group meetings, with Prof. Tsuneaki Yoshida of the Department of International Studies, Graduate School of Frontier Sciences of the University of Tokyo, as technical advisor. The research group consisted of staff from the Social Development Department of JICA. The research under Phase 2 focused on the Greater Mekong Subregion, examining the current conditions, identifying cross-border transport infrastructure issues, and discussing the future directions of JICA assistance for the area.

The Study Team, headed by Mr. Takashi Shoyama of ALMEC Corporation, conducted four field surveys, literature research in Japan, discussions between the research group and relevant agencies, as well as a public symposium based on the study’s findings. The Team also prepared a report, describing the study results.

I hope this report will contribute to the improvement and the enhancement of development assistance in cross-border transport infrastructure. To all those who cooperated and extended assistance to this study, I would like to express my sincere gratitude.

December 2007

OKAZAKI Yuji
Director, Social Development Department
Japan International Cooperation Agency

THE RESEARCH ON THE CROSS-BORDER TRANSPORTATION INFRASTRUCTURE Phase 2

Executive Summary

INTRODUCTION

Ancient routes, such as the “Silk Road,” enhanced trade and contributed to the growth of civilization, the development of culture and the strengthening of connectivity among people and communities. Cross-border traffic of people and goods has grown apace with the widening of regional markets and the growth of cross-country labor. To support the growth of cross-border mobility, the development of cross-border transport infrastructure has never been more magnified and more urgently needed than now.

Cross-border transport infrastructure not only contributes to a freer regional trade and better investment climate between countries but also opens up border areas that have long been alienated from mainstream development activities. International aid agencies have been active in the development of such infrastructure. However, the current intensification of cross-border traffic has corresponding negative implications such as widening disparities between areas and countries. There remain many bottlenecks and inadequacies that must be attended to, such as the underutilization of existing roads and ports and the prevailing institutional bottlenecks.

In 2005 and 2006, JICA conducted a study titled “Research on Cross-border Transportation Infrastructure,” which examined the global progress of regionalization and the impacts of cross-border transport. Following the findings of the study, Phase 2 study was conducted in 2007, focusing on the Greater Mekong Subregion in Asia where the development of cross-border transport infrastructure has grown in recent years. The study analyzed the progress and problems of cross- border transport in the subregion and identified directions for future JICA assistance. This booklet summarizes the result of the Phase 2 study.

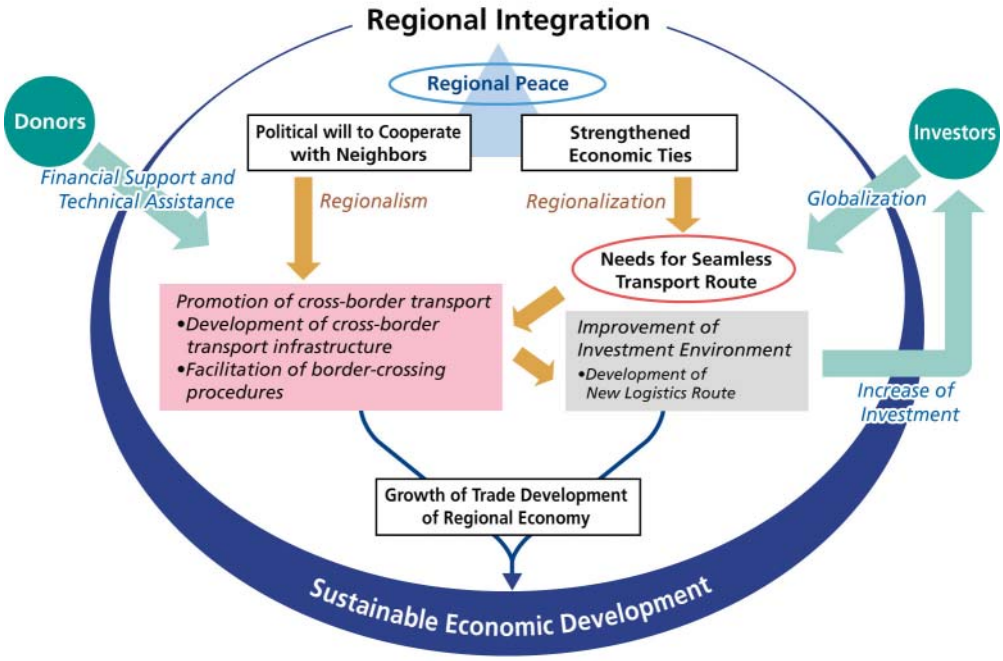
What is Cross-border Transport Infrastructure ?

1. Factors Surrounding CBTI Development

CBTI development begins when the process of globalization or regionalization takes hold in a given region under a prevailing climate of peace and development.

Regional peace and the presence of investors are indispensable factors in the process of regionalization. Likewise, the political will to strengthen regional cooperation, or the sharing of common development strategies among the countries in a given region, leads to a common commitment for CBTI development and the simplification of border-crossing procedures. The expansion of cross-border traffic encourages the opening of new logistics routes and stimulates the growth of regional economic activities, which in turn sustain the increase of investments. In addition to regional technology and investment capital, some countries might require external donors that are capable of accelerating this process. In the Greater Mekong Subregion, the Asian Development Bank has played a leading role in the provision of financial and technical assistance.

Factors Surrounding CBTI Development

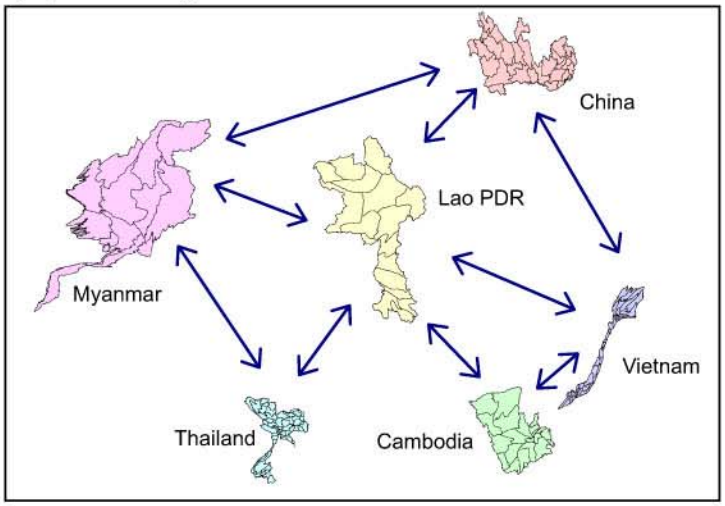


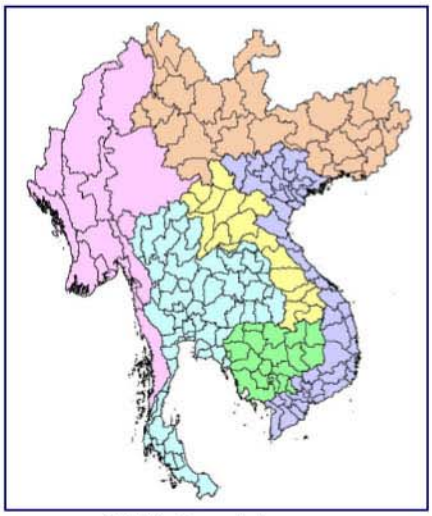
2. Primary Impact of CBTI Development

The CBTI development and the simplification of border-crossing procedures reduce the time distance between member countries in a given region, which means that they decrease transport costs. As shown in the figure below, because of the large border-crossing barriers that used to stand between them, GMS countries where once considered to be islands far from each other. The progress of CBTI development and the simplification of border-crossing procedures began to drastically reduce border crossing barriers and increased the integration of the GMS countries. The reduction of travel time and distance are the most significant benefits that come from the growth of border-crossing traffic.

Time-Distance Map before and after CBTI/CBTA Development in Greater Mekong Subregion

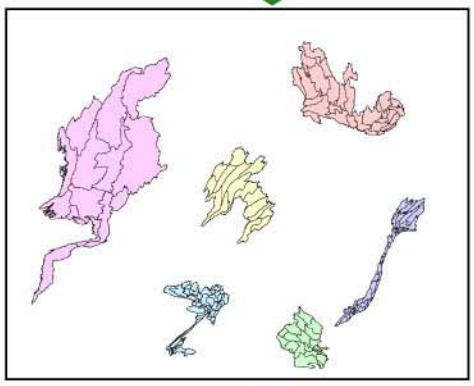
(A) 2000: Large Cross-border Barriers



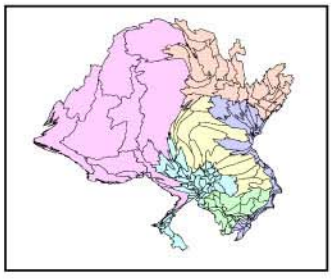


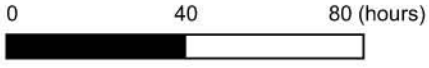
GMS Countries

(B) 2006: Present



(C) 2015:
After CBTI/CBTA Implementation





Source: Regional Planning and Information Laboratory, University of Tokyo

3. Return of Regional Peace

Since the end of World War II the Greater Mekong Subregion was constantly mired in one conflict after another. The Vietnam-Franco conflict from 1946 – 1954, the Vietnam War from 1960 – 1975. Lao PDR was mired in incessant civil wars between the government and the Pathet Lao. Cambodia had its own bloody civil wars in which Vietnam intervened at one time (1978). The Paris Peace Treaty signed in 1991 finally ended Cambodia's internal strife.

Political stability was then restored in the subregion. Although these countries had been under a socialist regime of one form or another, except for Thailand, their policy stances began to change. The Doi Moi (reform) policy of Vietnam (1986) and the Chintanakan Mai (new thinking) policy of Lao PDR (1986) were the groundbreaking economic policies that pursued development through market mechanisms.

Then Thai Prime Minister Chatchai made his public appeal to "convert Indochina from a battlefield to a market." With the active coordination by the ADB, the meeting of the economic ministers from six GMS countries was convened in 1992. This was the beginning of the GMS economic cooperation program.

4. Socio-economic Conditions

Thailand leads other countries in GDP. The Guangxi Zhuang Autonomous Region and Yunnan Province are a distant second and third, with their GDPs about a fourth of Thailand's. Vietnam is fourth. Cambodia, Lao PDR, and Myanmar are at the tailend of the GDP ranking. The subregion embodies large economic disparities within the GMS.

Thailand also leads its GMS neighbors in international trade. However, in recent years Vietnam has recorded the highest growth, followed by Cambodia and Thailand. Trade growth has been moderate in Lao PDR, while it has been stagnant in Myanmar. The trade–to-GDP ratio has been high in majority of the GMS countries. This has grave implications for low-income countries, because decreases in trade pose a serious threat to smaller economies.

Basic Socio-economic Indicators of GMS Countries (2004)

	Area 1,000 km^2	Population 1,000	GDP Million US$	GDP per capita (US$)	Export[1)] Million US$	Import[1)] Million US$	Trade growth rate (%) [2)]
Cambodia	181	13,589	4,864	358	3100	3700	17
Lao PDR	237	5,758	2,437	423	510	745	10
Myanmar	677	54,745	9,081	166	2925	2250	0
Thailand	513	64,470	163,547	2,537	110,110	118,191	16
Vietnam	330	82,222	45,402	554	31,625	36,476	21
Yunnan Province	394	44,150	35,756	810	n.a.	n.a.	n.a.
Guangxi Zhuang Autonomous Region	237	48,890	40,113	821	n.a.	n.a.	n.a.
GMS Total	2,569	313,824	301,201	960	127,412	131,396	17

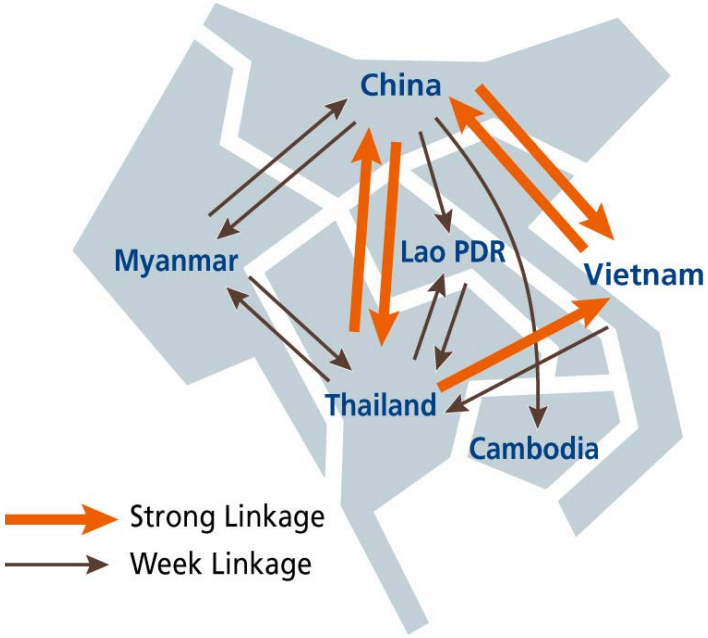
Source: Masami ISHIDA, IDE-World Trend, No. 134, Nov. 2006 and WTO, World Trade Statistics, 2006 for Trade statistics

Note: 1) as of 2005

2) Annual growth rate of total trade value (export and import) in 2001-2005.

The basic pattern of trading in the Greater Mekong Suubregion is a triangle of trading activities among China, Thailand, and Vietnam, with Lao PDR, Cambodia, and Myanmar playing marginal roles. Notably, the three marginal players are becoming increasingly dependent on subregional trade. For example, Thailand's share in the whole trading spectrum has been rapidly rising in Cambodia, Lao PDR, and Myanmar.

Trade Pattern among GMS countries



5. Cross-border Transport Infrastructure

Asian Highway/ASEAN Highway

The Asian Highway was conceived way back as an international road transport network that would augment the development purposes in Asia through the promotion of trade and tourism within and without the region. The UN Economic Commission for Asia and the Far East (ECAFE, the precursor of the present ESCAP) began its deliberations on the project in the 1950s. By 2002, the project covered 32 Asian countries with a total road extension of 141,000km, connecting the Asian Highway with the European Highway. The Highway extends 14,511km in the Greater Mekong Subregion, and road construction and improvement have been underway in various places.

The ASEAN Highway is part of the ASEAN transport network project that aims to develop an integrated system of transportation among the 10 ASEAN countries. It consists of 23 routes with a total distance of 38,400km. The project was designed to complement the Asian Highway network.

Recent construction works on two highways have been directed to those road sections and bridges that are expected to play a key role in subregional development.

Railway Network

All GMS countries, except for Lao PDR, have railways. They commonly feature narrow gauges (1m) except for some parts of Vietnam. When viewed as a subregional whole, the existing railways are considered as an incomplete network. Missing links exist between major cities in the subregion. Railways are mostly of single track and their capacities are generally small. They service only limited freight and passenger demands.

Port/ Airport

Because the bulk of international logistics relies on them, ports are extremely important in GMS international trading. However, port accessibility in the subregion is still limited. Ports in Hai Phong and Cai Lan in Vietnam, in Shihanoukville in Cambodia, and in Yangon in Myanmar, among others, are off the trunk shipping routes. They merely serve as feeder ports to regional major ports in Singapore and Laem Chabang. The demand for air cargo transport is still very limited in the subregion. Airports mainly serve passenger traffic.

Cross-border Points

There are many cross-border points among the GMS countries. Forty of them are Class I points that pass people and goods from any country, including third countries which have diplomatic relations with the transit country. There are 36 Class II border points that allow people and goods between two neighboring countries. Most of these points have simple facilities. Along with expanding cross-border land traffic is the emerging need to simplify border formalities. The ideal is to provide border gates with adequate buildings for customs and quarantine, and equipped with scanning tools and ICT apparatus.

Major CBTI and Cross-border Points

Source: Formulated by the Study Team based on existing data

6. Soft Infrastructure for Cross-border Transport

To boost the free movement of people and goods across borders it is crucial to develop adequate institutions in addition to physical facilities. In the Greater Mekong Subregion, the multilateral agreement, namely, the Cross-border Transport Agreement (CBTA) was set up in addition to existing bilateral agreements. CBTA stipulations cover (i) facilitation of border-crossing formalities, (ii) cross-border movement of persons, (iii) transit traffic regimes, (iv) requirements for road vehicles in cross-border traffic, (v) exchange of commercial traffic rights, and (vi) infrastructure standards. The Agreement was initially signed in 1999 by Lao PDR, Thailand, and Vietnam, but soon joined by Cambodia in 2001, China in 2002, and Myanmar in 2003. By March of 2007, these countries finished signing all the minutes attached to the CBTA.

Although the signing has been done, ratification is yet incomplete among member countries. It is

anticipated that the CBTA will take some time to reach its full stage of implementation.

7. Existing Regional Cooperation Mechanism

GMS Development Program

The ADB took the initiative of facilitating the formulation of the GMS Economic Cooperation Program, which started in 1992. The program aims to attain subregional economic development and cooperation through efficient investments in cross-border transport infrastructure. Although the primary focus is on transport, the program covers nine other sectors, namely agriculture, energy, environment, human resources, investment, telecommunication, tourism, trade, and private sector investment.

Regional Economic Corridor

To stimulate the effective and efficient growth of direct investments and production, the program prioritizes its development agenda through the identification of major economic corridors for transport infrastructure development. Two north-south corridors, one east-west corridor, and two south corridors were initially identified in 2000. The corridors increased to nine in 2007 with the addition of a northeast corridor from Bangkok to Hanoi, a north corridor that reaches Myanmar as well as two others.

GMS の主要地域経済コリドー

Source: ADB. GMS Transport Sector Strategy. 2007

GMS Challenge of CBTI/CBTA Implementation

1. Development of Land Routes for Long- distance Logistics through Cross-border Transport Infrastructure Development

Long-distance freight traffic in the subregion has long depended mainly on maritime shipping. The steady development of cross-border infrastructure which reduces risks and minimizes barriers to travel has made land transport an important alternative to other transport modes. In December 2006, the Second Mekong International Bridge was completed through the assistance of Japan's Yen Credit program. The bridge connects the East-West Economic Corridor which traverses the Indochinese Peninsula from Vietnam to Myanmar. The bridge's opening added momentum to the drive to establish a subregional logistics network.

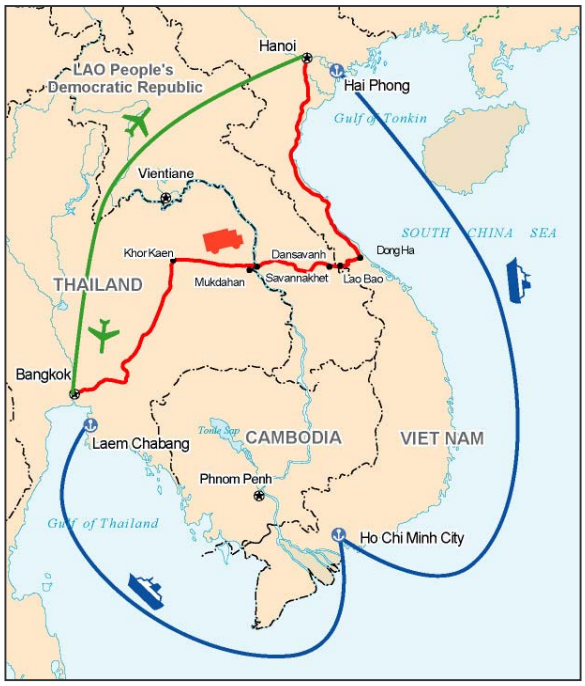
Inter-city Container Cargo Transport in Indochina

Route	Land Transport			Sea Transport		Remark
	km	day	Cost	day	Cost	
Guangzhou -Hanoi	1,190	2	3,000	4-6	1,500	40ft container including customs
HCMC-Hanoi	1,600	3-4	1,200	4-6	750	40ft container domestic cargo
Bangkok-Hanoi	1,555	3-4	4,200	10-15	2,000	40ft container including customs
Bangkok-HCMC	913	2	1,390	2-3	560	10t truck and 20 ft container, excluding customs
Bangkok-Yangon	945	3	730	30	1,130	10t truck and 20 ft container, excluding customs

Source: NNA, "East-West Economic Corridors developed by Japan", Feb. 2007

The multinational company including Japanese companies as well as local one is particularly interested in the Bangkok-Hanoi route. Some decisive steps, including trial runs, have been taken to establish regular transport services. The land trip between Bangkok and Hanoi takes 3 to 4 days passing through the new bridge, which is a remarkable reduction in travel time compared with coastal shipping which takes about 2 weeks. However, because land transport costs more than twice as much, maritime shipping will retain its advantage in bulk transport. Nonetheless, the speed and the convenience of land transport attract private interests. One immediate issue on this route is the simplification of border formalities for international transit in Lao PDR. Another issue is the volume of backhaul cargo, i.e. the freight back from Hanoi to Bangkok is negligible. This requires the promotion of regional development integrated with cross-border transport infrastructure and development of logistics facilities including ICD along the route.

タイ Bangkok-ベトナム Hanoi ルート



Source: JICA Study Team

2. Reduction of Institutional Cross-border Barriers

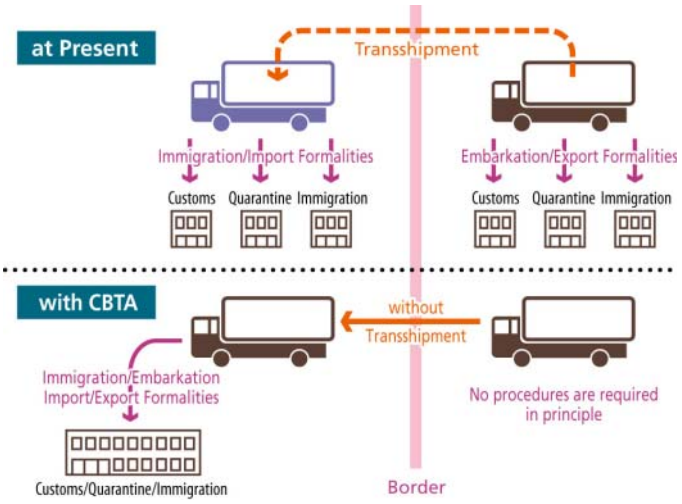
The development of CBTI-related roads and bridges has steadily progressed financed by the ADB, JBIC, and lately by Thailand and China. In contrast, institutional bottlenecks still persist in border-crossing formalities. Cross-border barriers are now largely of institutional origin.

Although the CBTA signed by GMS countries defines the institutional framework for border crossing, many problems and obstacles continue to work against its implementation. In some cases, CBTA stipulations infringe on domestic laws, while the necessary domestic legislation has been slow in other areas. Also, customs officials reportedly have vested interests in the existing system and resist the CBTA implementation.

The primary issue is the simplification of border formalities. Currently, crossings have to clear formalities at both sides of the border. Two countries can agree to a single stop where exit and entry formalities are cleared simultaneously in the country of entry. Although customs, quarantine, and immigration formalities are currently handled through separate windows, they can be unified in one window.

The simplification of formalities carries an impact as large as the development of physical border-crossing facilities, which means that it is urgently necessary to step up CBTA implementation.

Mechanism to Facilitate Border-crossing Formalities

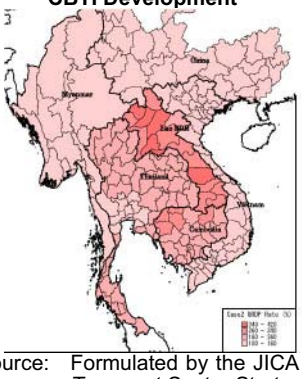


Expected GRDP Growth from CBTI /CBTA Implementation

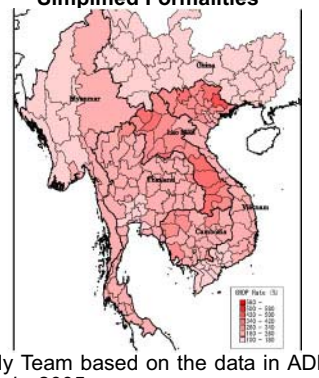
The map A on the left shows GRDP growth that is expected in various parts of the subregion from CBTI development along the three designated economic corridors. The map on the right similarly shows GRDP growth that is expected from the reduction of time spent at 16 CBTA-designated border crossing points to 30 minutes by simplifying formalities.

The estimation is based on informed judgment over salient factors and does not bear rigorous scrutiny. Nonetheless, it must be noted that the growth is higher in those areas with lower GRDP in Cambodia and Lao PDR, and that simplified border formalities could bring as many benefits as the investment in transport infrastructure.

Map A: GRDP Growth through CBTI Development [1)]



Map B: GRDP Growth through Simplified Formalities [2)]



Source: Formulated by the JICA Study Team based on the data in ADB, *Transport Sector Strategy Study*, 2005.

Notes: 1) The CBTI development along Bangkok – Hanoi, Bangkok – Ho Chi Minh, and Bangkok – Kunming routes
2) Reduction of time spent at 16 border-crossing points to 30 minutes

3. Regional Development Activities integrated with CBTI Development

The formulation of regional development strategies is crucial to maximize the benefits of ongoing CBTI development. The usual strategy prioritizes development projects in terms of industrial structure and the inherent resources of a given country. The growing cross-border traffic, trade, and labor mobility necessitate project prioritization that takes into consideration GMS subregional industrial structure and cross-country comparative advantages.

Major Regional Development Proposed at Border Area

Country	Border Area Development
Cambodia	Manhattan SEZ（Bavet） Poipet SEZ KohKong SEZ Sihanoukville SEZ
Lao PDR	Savan-Seno SEZ
Myanmar	Myawadi-Mea Sot
Thailand	Chiang Rai SEZ Mukdahan SEZ Trat-Koh Kong SEZ Myanmar SEZ
Vietnam	Lao Bao SEZ Moc Bai SEZ

CBTI-integrated regional development efforts will induce the growth of local traffic along border-crossing routes as well as demand shifts from air and maritime transport. It is crucial to implement such integrated regional development projects including natural resources development and agricultural development to tap the benefits of CBTI development, especially in Lao PDR and Cambodia where the economic corridors are expected to transit both cargoes and passengers.

4. Allaying Negative Impacts

CBTI/CBTA implementation will spur the expansion of border-crossing traffic and subregional development, including the activation of economic activities in border areas. However, impacts are not all likely to be beneficial. Appropriate countermeasures must be put in place at the present stage against disruptive impacts that could beset CBTI/CBTA-related subregional development. The negative impacts include the following:

A. Widening of disparities between countries and regions with short-term increase of unemployment

B. Negative economic impact that drain areas or countries along border crossing routes;

C. Spread of infectious diseases to people, livestock, animals and plants,

D. Human trafficking, smuggling of narcotics and arms, and threat of terrorism; and

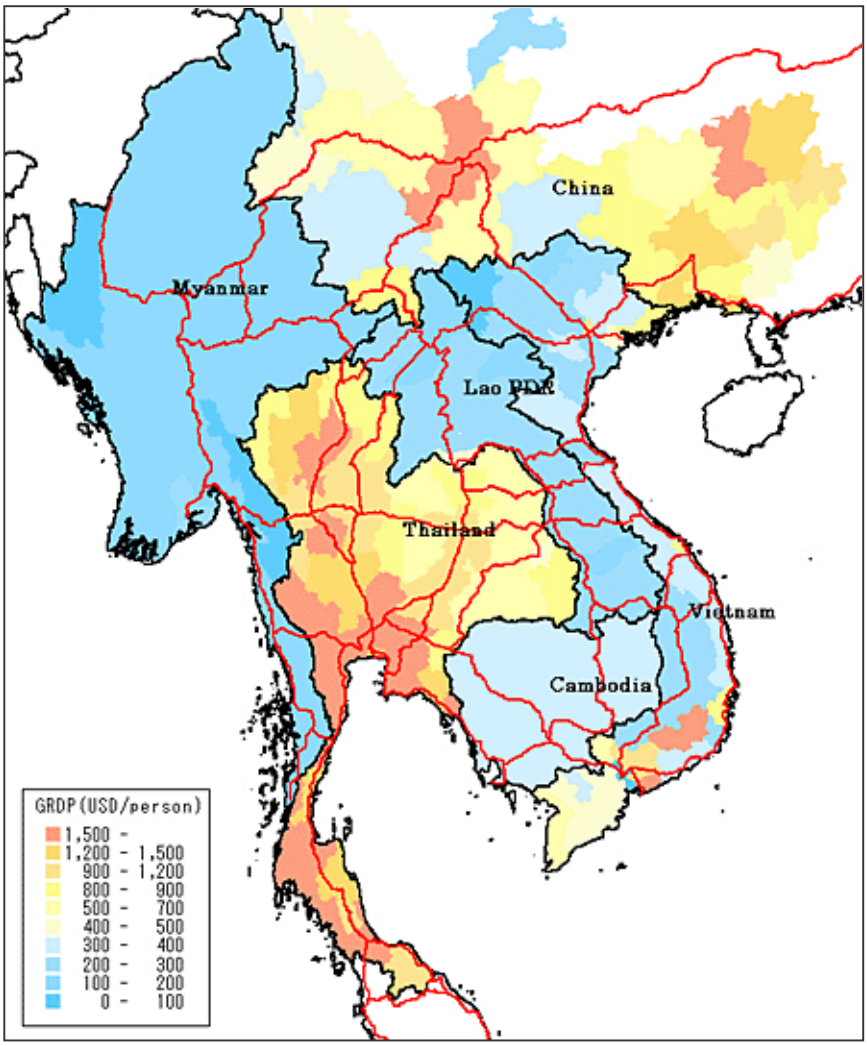
E. Deterioration of traffic safety (increase in traffic accidents).

5. Toward the Subregional Growth and the Narrowing of Disparities Within

The challenge for GMS countries is to raise the bar of competitiveness in the subregion as a whole and by strengthening the system for international logistics, expanding subregional trade, and furthering the globalization process.

The present subregional reality is the growing economic disparities among the GMS countries as reflected in the respective per-capita GRDPs, which are widening between the advanced countries of Thailand and China and the poorer ones such as Cambodia and Lao PDR. As suggested earlier in the estimation of GRDP growth induced by CBTI/CBTA implementation, the subregional promotion of cross-border traffic is expected to bring higher economic growth to poorer countries. Thus it is important to undertake measures to complement CBTI development so that the current subregional disparities will diminish in due time.

Per-capita GRDP in GMS Countries



Source: Formulated by the Study Team based on existing data.

Notes: 1) Per-capita GDPs are shown for Cambodia. GRDP for Lao PDR and Myanmar was estimated by the study team from its total GDP. GRDPs for China, Thailand, and Vietnam were estimated based on GPP (Gross Provincial Product).

2) Cambodia: 2004, Vietnam: 2004, Thailand: 2003, Yunnan: 2003, and Guangxi Zhuang Autonomous Region: 2005.

3) Per-capita GRDP for Myanmar was calculated from 2004 GDP and 2005 population and GRDP

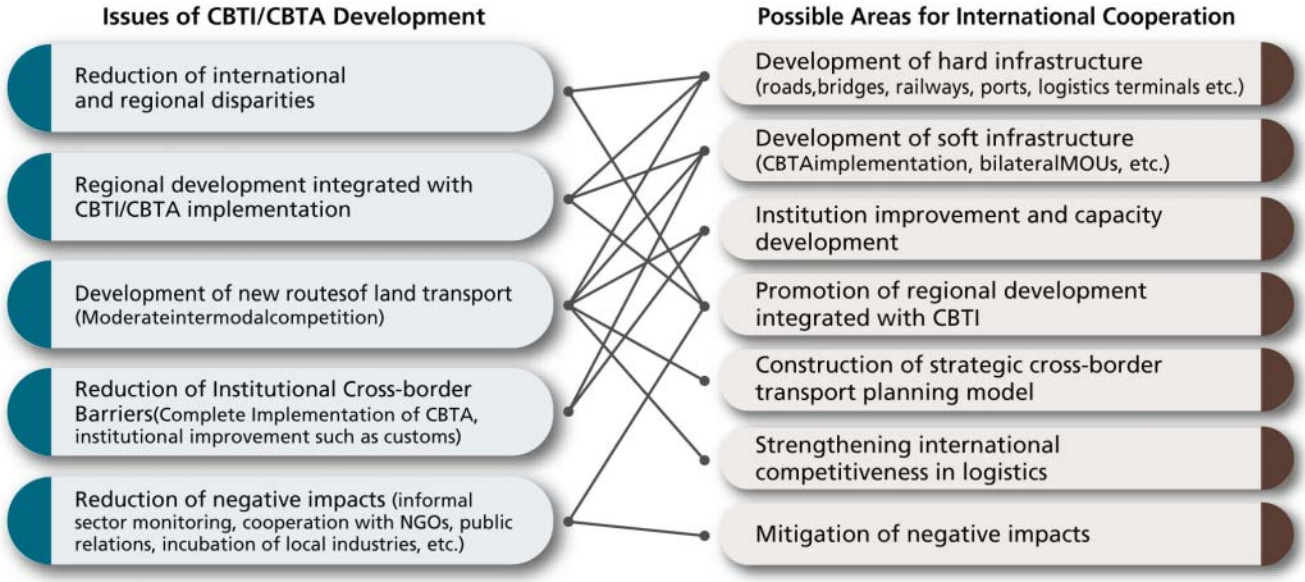
4) Per-capita GRDP for Lao PDR was calculated from 2003 GDP and 2002 population.

GMS Challenges and Direction of JICA Cooperation

As discussed in the foregoing description, the development of cross-border transport necessitates the subregional cooperation among GMS countries over a great diversity of issues. Their challenge requires a wide range of technical assistance on capacity development and institutional improvement and financial support from international donors including JICA.

JICA expects to provide active support to GMS countries regarding the promotion of cross-border traffic, especially their combined efforts to cope with subregional issues. In order to utilize available resources and assets as best as possible, JICA aims to provide focused support on priority sectors and regions by carefully weighing ongoing assistance by other external donors and the schemes of cooperation in the agenda of New JICA for 2008.

International Cooperation Required for CBTI/CBTA Issues



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Abbreviation

ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
ASEAN	Association of Southeast Asian Nations
CBTA	Cross-border Transport Agreement
CBTI	Cross-border Transport Infrastructure
CGE	Computable General Equilibrium
CLVT	Cambodia-Lao PDR-Vietnam-Thailand
C-TPAT	Customs-Trade Partnership Against Terrorism
EDI	Electronic Data Interchange
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FTZ	Free Trade Zone
GDP	Gross Domestic Product
GIS	Geographic Information System
GMS	Greater Mekong Subregion
GRDP	Gross Regional Domestic Product
HCMC	Ho Chi Minh City
IBRD	International Bank for Reconstruction and Development
ICD	Inland Container Depot
ICP	International Checking Point
ICT	Information and Communication Technology
IICBTA	Initial Implementation of Cross-Border Transport Agreement
IO	Input-output (table)
IPPF	International Planned Parenthood Federation
JBIC	Japan Bank for International Cooperation
JETRO	Japan External Trade Organization
JSCE	Japan Society of Civil Engineers
JTCA	Japan Transport Cooperation Association
METI	Ministry of Economic, Trade and Industry
MLIT	Ministry of Land, Infrastructure and Transport, Japan
MOU	Minutes of Understanding
MRC	Mekong River Commission
NGO	Non-governmental Organization
NTFC	National Transport Facilitation Committee
PPAT	Planned Parenthood Association of Thailand-
RFID	Radio Frequency Identification
SCGE	Spatial Computable General Equilibrium (Model)
SEZ	Special Economic Zone
SSI	Single Stop Inspection
SWI	Single Window Inspection
TAR	Trans Asian Railway
TEU	Twenty-feet Equivalent Unit
UN-ECE	The United Nations Economic Commission for Europe
UN-ESCAP	The United Nations Economic and Social Commission for Asia and the Pacific
WB	World Bank
WCO	World Custom Organization
WTO	World Trade Organization