

4. Future Directions for JICA Cooperation

4.1 Required International Cooperation for CBTI Development

1) Aid Implications of the CBTI Issues

Chapter 3 discussed the issues concerning cross-border transport infrastructure in the Greater Mekong Subregion. The respective countries themselves must strive to overcome a variety of bottlenecks already mentioned, but certain areas of CBTI development will have to depend on the financial and/or technical cooperation from external donors. Figure 4.1.1 summarizes the major issues discussed in the previous chapter and which parts need external cooperation.

Figure 4.1.1 Required International Cooperation for CBTI/CBTA Issues

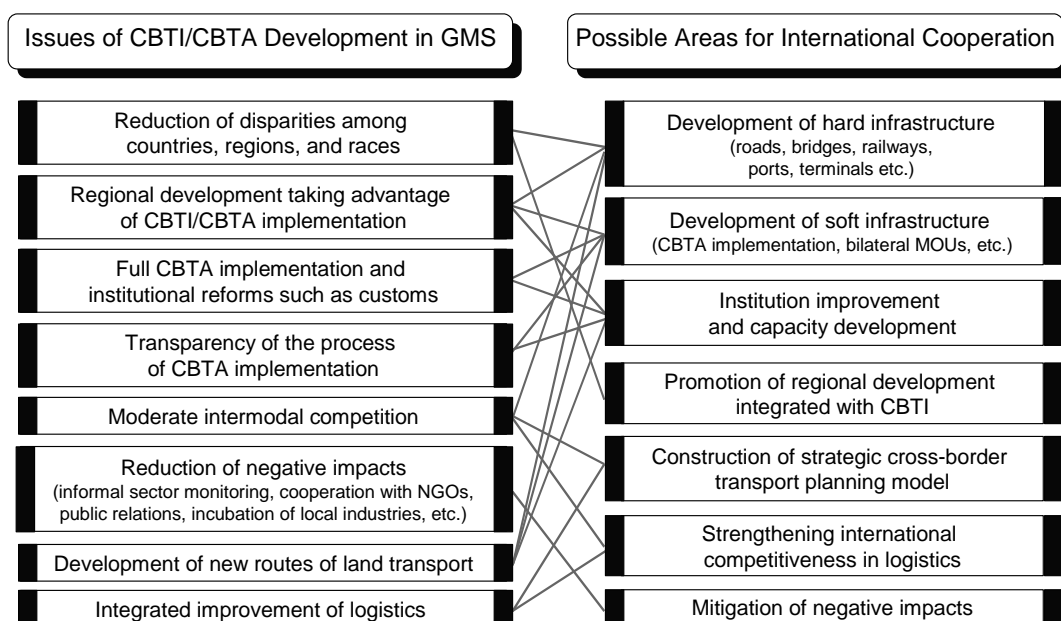
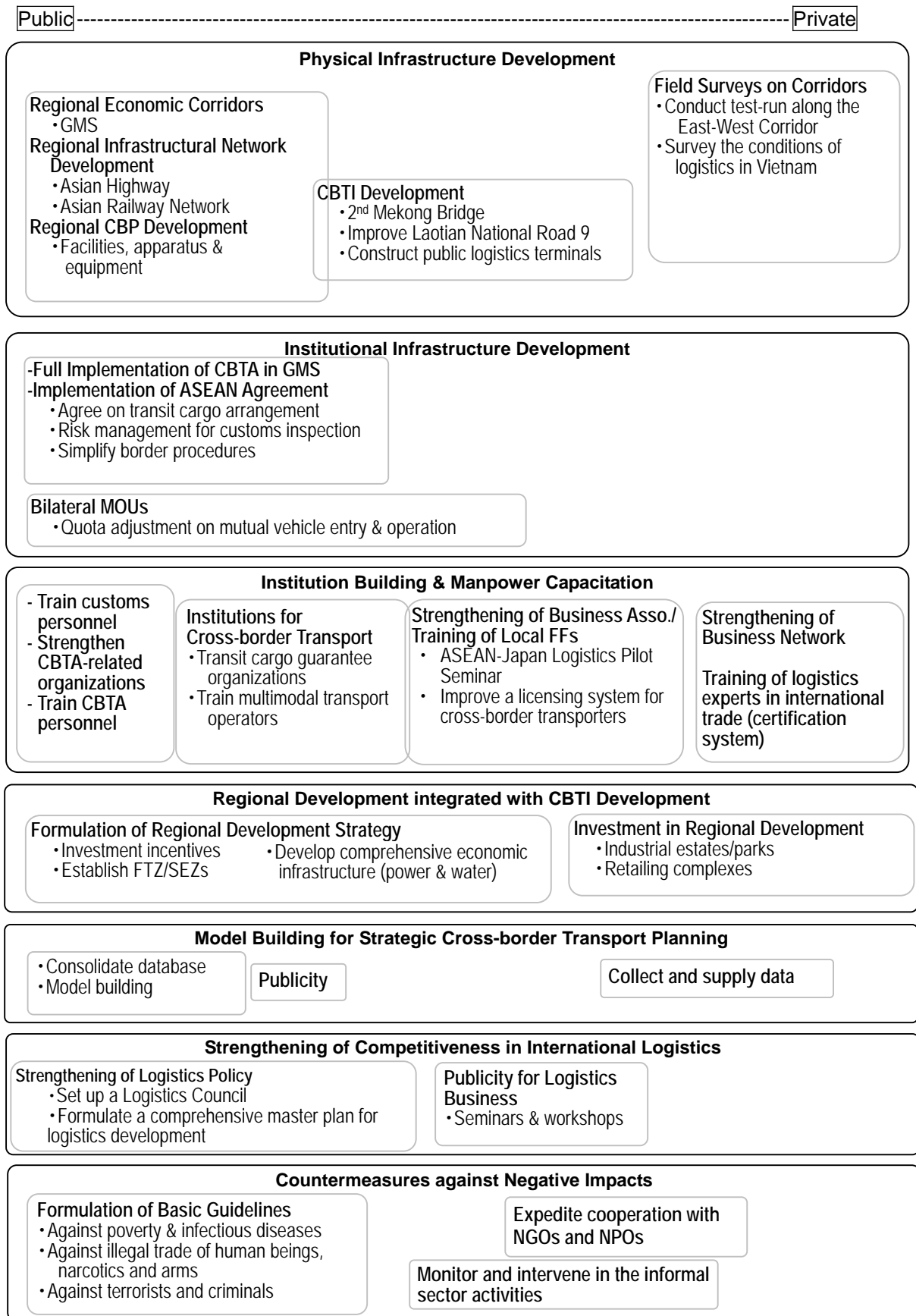


Figure 4.1.2 illustrates public- and private-sector requirements for international cooperation in the Greater Mekong Subregion. The demarcation between the public and the private sector is naturally a gray area and varies according to the level of economic development of GMS countries. It will probably be necessary, for example, in Lao PDR and Cambodia to introduce government interventions to cushion the rapid change in private sector activities. More specifically, the governments of the two countries should take a leading role in establishing and managing transit cargo, guaranteeing organizations and institute training programs to empower local transporters. They will have to steer private sector activities in other spheres related to cross-border logistics. Another important role for governments is to monitor and intervene, if needed, in the informal sector with the aim of reducing poverty.

Figure 4.1.2 International Cooperation Requirements of Public and Private Sectors



2) **Development of Physical Infrastructure**

International donors have been financing physical cross-border transport infrastructure in line with the ADB-supported framework of developing regional economic corridors. External financing has been concentrated on the east-west corridor for which the recent completion of the Second Mekong Bridge provided the final link. Except for the western section located in Myanmar, the entire corridor has road structures that are higher than the acceptable standards. Other major corridors still have many sections where the road widths, pavements, and other structural conditions are too inadequate to handle international logistics traffic. This calls for continued financial and technical support by external donors. In addition to road structures, there is a significant need for associated development, such as the construction of public logistics terminals, development of industrial parks along corridors especially in border areas, investment in economic infrastructure like power and water vital for industrial development, railway development and modernization, and so on. Although the required investment is smaller in scale, it is equally crucial to provide border gates with appropriate facilities and equipment necessary for customs inspection, including the introduction of ICTs, at certain border crossing points.

Furthermore, the ADB in 2007 has identified six more economic corridors to the regional development framework. These corridors are almost entirely ill-developed with hardly any pavement of international standards. Much will have to be done for these corridors to function effectively, beginning with the widening and improvement of road structures, the construction of numerous bridges, and many more.

The development does not end with the completion of the physical infrastructure. In order to activate the flows of freight and passengers along the corridors, it is necessary to closely monitor the utilization and maintenance of road facilities and to develop a possible approach to stimulate logistics services.

3) **Development of Institutional Infrastructure**

As repeatedly mentioned in this report, the institutional and the physical infrastructures are partners in facilitating future cross-border freight and passenger traffic. The development of physical infrastructure must go hand in hand with the full implementation of the CBTA as envisioned by the ADB. The development of the institutional infrastructure covers a wide range of actions, such as the simplification of customs, immigration, and quarantine procedures, standardization of forms and documents, speedup and increased efficiency of inspection, permission of mutual cross-border entry and operation of vehicles, agreement on transit cargo, and standardization of infrastructural grades and vehicle types. GMS countries are all in dire need of such institutional infrastructure in varying degrees. This is another area where the technical cooperation of international donors is necessary. In addition, international donors will have an important coordinating role to play in forging multinational agreements and commitment.

The agenda and the overall framework of institutional development for cross-border transport have already been defined as CBTA stipulations. Under an ADB initiative, GMS countries agreed on the annexes and protocols of the agreement. What is now needed is a series of legal enactments toward full CBTA implementation in each country, including the preparation and the conclusion of bilateral agreements, such as MOUs for IICBTA, and the deliberation and agreement on the quota for mutual cross-border vehicle entry and operation.

4) Institution Building and Capacity Development

As mentioned above, GMS countries agreed to the CBTA annexes and protocols in 2007 and are now starting various steps toward their full implementation by 2010. The progress of such efforts varies widely among GMS countries, beginning with the ratification of the annexes and protocols of the CBTA itself. Many stipulated goals of institutional and organizational development are yet incomplete, e.g. consistency of domestic laws and regulations with the CBTA, while the shortage of qualified manpower is increasingly felt in the process of CBTA implementation. To tackle these issues, a comprehensive approach is required which covers the preparation and promulgation of CBTA-relevant legal framework and the conduct of related human resource development with the provision of necessary equipment, along with ongoing physical infrastructure development.

Capacity development for CBTA implementation should cover the personnel of relevant ministries down to the customs, immigration, and quarantine officials at border crossing points and all private operators. More specifically, education or training is necessary for those who can understand the far-reaching importance of CBTA implementation and are in a position high enough in the administrative pyramid to sway the mindset of lower-level government officials who have vested interests of one kind or another (customs officials, police officers, immigration and quarantine personnel) and are thus strongly resistant to any change. Training and discipline are necessary, of course, for the officials directly in charge of border crossing procedures. International donor-assisted training program is meant to train those officials who are positioned in the administrative structure to train the relevant personnel and impart to them the new discipline and commitment. It will also be important to combine such training of personnel with adequate provision of equipment which can be put to effective use at border crossing points or elsewhere when trainees report back to work. In other words, an integrated human resources development and equipment provision is required.

The private sector operators who directly avail themselves of the cross-border transport infrastructure are also in need of capacity development to better manage business, thereby sharing due economic benefits of accelerating regional integration. In addition, business associations and networking to pool and exchange relevant information will be necessary for them to take active part in the increasing flows of international logistics and to gain a competitive edge in the increasing business chances.

In sum, full CBTA implementation does not merely call for short-term training courses but a long-term commitment to technical cooperation combined with the opportune provision of needed equipment. The institutional infrastructure development areas needing such sustained commitment on the part of international donor agencies are manifold.

5) Integrated Promotion of Regional Development and CBTI Development

The economic impacts of cross-border transport infrastructure development can be maximized in association with regional or area development. The conventional approach to infrastructure or regional development planning is to seek priority areas from among the various domestic industries and resources within a country. However, due to economic globalization in general and the growing cross-border traffic stimulated by CBTI development in particular, it is more relevant now than ever to seek priority areas for integrated development and formulate strategies for them, taking into consideration the prospects of changing the industrial structure in the entire Greater Mekong Subregion and the comparative advantages among the countries.

Furthermore, regional or area development in close association with CBTI development will serve to induce local demand along the cross-border routes in addition to the transport demand which shifted from other modes (e.g. coastal shipping). This will increase the cost-effectiveness of the investment in cross-border transport infrastructure. Especially with regard to Lao PDR and Cambodia where the major economic corridors go through, the progress of regional development along the regional economic corridors will enable them to reap the benefits from CBTI development. Otherwise, they will find it hard-as they apparently do already-to see the economic merit of corridors that carry mostly transit cargo.

The significance of CBTI-related regional development must be argued from another angle. Most of the border areas have long been beyond the reach of national development efforts of each GMS country. Regional development focusing on cross-border routes is another approach to reduce and alleviate the problems of international and regional disparity among and poverty in GMS countries.

The regional development strategy integrated with CBTI development centers on special economic zones (SEZs) in the border areas, inland container depots (ICDs) and public logistics terminals partly functioning as bonded warehouses, and regional development projects focusing on natural or tourist resources near the cross-border routes. Industrial parks and commercial complexes in the border areas could be facilitated on the basis of providing access to the cross-border supply of power and water.

6) Model Building for Strategic Cross-border Transport Planning

Although a variety of approaches and future visions have been proposed and proselytized by the ADB and other international organizations regarding CBTI development, their arguments are largely based on informed judgment or negotiations and lack the quantitative analysis and evaluation to estimate the possible economic effects of CBTI investment. In order to facilitate and forge a multi-country agreement on CBTI strategy and the corresponding project prioritization, it is necessary to develop a computerized model for evaluating proposed strategies.

The primary constraint to such model building is the paucity of data. The inadequacy of statistical information is almost universal in the developing world, and what little is available often lacks common standards necessary for comparison and aggregation among countries. Such limitations are especially pronounced in the data on logistics.

A large number of studies and surveys have been conducted so far on regional development, transport planning, or transport infrastructure development in the Greater Mekong Subregion, wherein JICA is one of the major contributors. The proposed model building for strategic CBTI development planning will play an important role in consolidating the database from the findings of these studies and in integrating the methodology for transport surveys and their analyses. Such model-building efforts on CBTI development are being promoted under the sponsorship of Japan's Ministry of Land, Infrastructure and Transport (MLIT) and/or of some relevant academic society in Japan, and these attempts themselves could serve as occasions for the transfer of technology to the relevant personnel in GMS countries.

7) Strengthening of International Competitiveness in Logistics

As has been repeatedly mentioned, economic globalization and the intensification of cross-border economic activities require the improved efficiency and quality of service in

logistics. Logistics encompasses many sectors and actors such as the public sector in charge of transport, customs and immigration, economic and fiscal policies, and many others, as well as the private sector comprising forwarders, transporters, consigners, insurers and so forth. Ongoing improvement efforts among them are specific to their respective areas of jurisdiction or specialized interests, lacking the comprehensive approach to the entire logistics issues.

The governments of GMS countries have become increasingly aware of the need for a comprehensive logistics policy for the subregion. However, some of them do not have a domestic inter-ministerial coordinating body for policy deliberation, which is necessary to formulate a comprehensive logistics policy. The strengthening of competitiveness in international logistics is crucial to activate and uplift the economies of low-income GMS countries and narrow down the growing disparities within the Greater Mekong Subregion. There are many areas that call for international cooperation from external donors. The ASEAN has already initiated the compilation of a regional roadmap in aid of an integrated logistics services among the member countries, while Japan's MLIT and the Ministry of Economy, Trade and Industry have been providing technical support to the ASEAN logistics sector under the aegis of the ASEAN-Japan Partnership agreement. New technical cooperation efforts can be initiated in coordination with such existing initiatives.

8) Programs to Counteract Negative Impacts

As mentioned in Chapter 3, the growth of cross-border freight and passenger traffic and the progress of regional development in the border areas will bring not only large economic benefits to the GMS but also unwelcome negative impacts. Countermeasures against these negative consequences often lag far behind those policy instruments that put priority on economic growth. This tendency is especially likely to arise in low-income countries. Moreover, there is a question of which agency of which country should be in charge of such countermeasures when a given negative impact should spread across the borders.

Multilateral aid organizations and NGOs have a great deal to offer in this sphere by organizing preventive awareness campaigns as well as providing specific remedies and quick interventions.

4.2 Possible Areas for JICA Cooperation

The preceding paragraphs discussed and summarized those issues of CBTI development that need some form of international cooperation from the external donors. This section discusses the possibility for JICA cooperation and the desirability of JICA involvement in these issues.

1) Selection and Concentration

It is essential for JICA, for the effective use of its accumulated pool of resources and assets, to act on the principle of selective concentration in performing its mandated schemes of technical cooperation. The basic ground for such selective concentration can be summarized as follows:

Japan's Basic Policy of Cooperation for ASEAN Countries: As discussed in Chapter 2, Japan publicly stresses its commitment to the ASEAN countries in its policy for international cooperation. One of the basic issues emphasized in this commitment is the "narrowing of disparities between GMS countries." This could mean that Japan's cooperation would center on Lao PDR, Cambodia, and Myanmar which have been increasingly lagging behind the other GMS countries.

Past and Ongoing Activities of International Donors: The ADB and other international donors have been actively supporting the development of physical and institutional infrastructure in the GMS. Their programs have not yet extended explicitly to the areas of "model building for strategic CBTI development planning" and "strengthening of competitiveness in international logistics," but have been active in the areas mentioned as "institution building and capacity development," "regional development integrated with CBTI," and "programs to counteract negative impacts."

Policy for JICA Involvement: JICA is mandated to carry out a variety of schemes mostly in bilateral terms. Especially after its organizational integration with JBIC scheduled in 2008, their schemes will be more easily supportable by yen-loan financing, while, so far, JICA has been mandated to implement only small infrastructure project grants. The possible areas for CBTI/CBTA-related cooperation are matched up with the categories of JICA schemes in Table 4.2.1. Basically, JICA could cooperate in any area listed in the table, but its involvement is judged less needed in the institutional infrastructure development where significant progress has already been made under ADB leadership.

Table 4.2.1 Areas for International Cooperation and Available JICA Schemes

Area for Cooperation	JICA Scheme	Remark
Physical Infrastructure Development	*	Now only small project grants, but can be expanded in scale and scope of coverage after the integration with JBIC
Institutional Infrastructure Development	Technical cooperation projects / overseas assignments of Japanese experts	Progressing under ADB leadership (CBTA)
Institution Building and Capacity Development	Technical cooperation projects / overseas assignments of Japanese experts	Human resource development for private-sector performed under ASEAN-Japan Partnership arrangement
Promotion of Regional Development integrated with CBTI Development	Development studies/ Technical cooperation projects	
Model Building for Strategic Cross-border Transport Planning	Technical cooperation projects / research projects	Involves time-consuming data collection and preparation
Strengthening of Competitiveness in International Logistics	Development studies / Technical cooperation projects	
Countermeasures against Negative Impacts	(Technical Cooperation)	Mainly joint programs with NGOs

2) Guideline for JICA Cooperation

Based on the discussion in the preceding paragraphs, JICA cooperation is proposed to concentrate on the following two areas:

1. Institution Building and Capacity Development in the Greater Mekong Subregion

As mentioned earlier, the full implementation of ADB-led CBTA stipulations entails diverse actions on institutional development on the part of the GMS countries such as the formulation or amendment of domestic laws and regulations, appropriate training and capacity development of government officials from top to bottom, and various human resource developments in the private sector. Most of these manifold actions still have to be done. It is true that many programs for institution building and capacity development have been launched under the aegis of the ADB and other international organizations and also under the ASEAN-Japan Partnership arrangement, namely a variety of workshops for CBTA-related personnel and training courses for border officials. However, the bulk of these actions are short-term programs of the workshop type. A limited number of longer-term training courses have been offered only for personnel at some specific border gates and are far from being sufficient. The need for such longer-term training programs will surely grow as IICBTA implementation expands in the future.

The domestic legal enactments are crucial to the full CBTA implementation in the GMS. However, the progress up to now varies widely from one country to another, delaying the CBTA implementation and thus depriving the GMS as a whole of the earlier benefits expected to accrue. It must be noted that the domestic legal enactments are not something which could readily be expedited by any number of short-term workshops alone. They require longer and sustained commitment on the part of both GMS countries and external sponsors.

JICA technical cooperation has a long history in GMS countries, and its varied experiences in interpersonal intellectual exchanges have been accumulated in these countries. Long-term overseas assignments of Japanese experts for the training of government personnel, technical cooperation projects with construction and provision of facilities and equipment, and so forth have steadily expanded in scope and have improved in performance to serve the diversifying needs for institutional and capacity development. JICA is committed by its mandate to the area of institution building and capacity development and it should be able and ready to play a larger role in the GMS.

2. Two Selected Routes as Targets of JICA Assistance

The development of cross-border transport infrastructure in the GMS will proceed steadily in the foreseeable future with continued support of the ADB and other external donors, thereby realizing a much tighter economic integration along with the eventual CBTA implementation. The overall standards of cross-border infrastructure in the region, however, are still inadequate and it is necessary to concentrate investment in certain corridors of major importance to raise the efficiency of regional integration. The development of regional economic corridors has been steadily going on under the ADB leadership. The identified economic corridors, however, are not necessarily justified on the basis of quantitative analysis, where the expected impacts derived from CBTI development are not evaluated sufficiently.

Under such circumstances, JICA can make significant contributions by selectively concentrating its cooperation on two model economic corridors which are likely to play a crucial role in the region's economic development and integration. In addition to development activities, JICA should set up a monitoring system along the selected routes for the purpose of undertaking a more quantitative analysis and evaluation of their respective development processes.

In relation to Lao PDR and Cambodia, which are the ones likely to suffer most from the straw effects of cross-border transport infrastructure development, it is essential to implement regional development projects integrated with CBTI along the routes to raise the efficiency of CBTI investment in these countries. This calls for further commitments of JICA to institution building and capacity development partly including the CBTA implementation. This approach of selective development will serve, in no uncertain terms, the basic objective of narrowing regional disparities under Japan's national policy of international cooperation.

By weighing industrial structure and latent logistics demand, two model routes are selected from the GMS framework of regional economic corridors.¹⁾ These routes are: (i) Vietnam (Hanoi-Lao Bao)-Lao PDR (Dansavanh-Savannakhet)-Thailand (Mukdahan-Bangkok), and (ii) Vietnam (Ho Chi Minh-Moc Bai)-Cambodia (Bavet-Phnom Penh-Poipet)-Thailand (Aranyaprathet-Bangkok).

The areas for JICA involvement in institutional infrastructure development related to the ADB-sponsored CBTA will be diverse if need be, but should be limited in scale.

The following section will discuss in more detail the two target areas for JICA cooperation.

¹ Judgment is based on the JETRO field survey of 2006 on regional distribution network mapping and Study Team findings from the interviews in the GMS.

4.3 Institution Building and Capacity Development: 1st Area for JICA Cooperation

Table 4.3.1 summarizes the required actions on institution building and capacity development in accordance with the framework of the ADB-sponsored CBTA implementation. The possible technical cooperation programs for JICA are explained in subsequent pages.

Table 4.3.1 Institution Building and Capacity Development Needed for Complete Implementation of CBTA and Possible JICA Participation¹⁾

Area for Cooperation	Content of Cooperation	Recipient				Ongoing Action
		Central Gov't	Local Gov't ²⁾	Border Gates	Private Sector	
(1) Complete Implementation of CBTA						
CBTA Promotion	• Study of ongoing progress in CBTA implementation and identification of problems	◎ ³⁾ 1				ADB ⁴⁾
	• Promotion of CBTA awareness	◎ 2	◎	◎	◎	
(2) Transport						
Promotion of Cross-border Transport operators	• Establishment of licensing & permit systems for cross-border transporters and capacity development of licensing personnel	◎ 3	◎		◎	
	• Establishment of licensing systems for multimodal transport operators with mutual recognition among GMS countries	◎ ³⁾				ASEAN Framework for multi-modal transport operators
	• Capacity development for domestic cross-border transporters, strengthening of their associations	◎	4		◎	ASEAN-Japan Partnership ⁵⁾
Promotion of Mutual Vehicle Entry & Operation	• Establishment and diffusion of domestic vehicle inspection systems	◎	◎ 5			
	• Establishment of liability insurance systems for cross-border transport	◎			◎	ADB
(3) Customs, Immigration and Quarantine						
Simplification of Border Procedures	• Preparation of MOUs for major border crossing points	◎ ³⁾		○		ADB
	• Standardization of border crossing forms and documents	◎ ³⁾		◎		ADB
	• Training of personnel at cross-border points			6 ◎		ADB and other donors ⁶⁾
	• Provision of equipment and manpower capacity building to ensure procedural accuracy, speed and transparency			◎	◎	ADB and other donors
Efficiency of Customs Clearance	• Risk management	◎ 7	◎			JICA technical cooperation project
	• Introduction of ICT technology	◎ 8	◎			ASEAN-Japan Partnership ⁵⁾
Promotion of Transit Cargo	• Agreement on transit cargo (exemption from customs inspections and customs duties)	◎ ³⁾				ADB sponsored negotiations
	• Agreement on transit fees	◎ ³⁾				Feasibility study by ADB
	• Establishment of transit cargo guaranteeing bodies	◎				ADB
	• Institution building for bonded terminals and industrial parks	◎ 9	◎		○	Private sector initiatives

1) The areas for possible JICA participation are in red boxes.

2) Technical cooperation is for the personnel of a given government department or agency in charge.

3) These are programs which require coordination among more than two countries.

4) ADB-assisted compilation of the roadmap of each country, information sharing by ADB and other external donors.

5) The programs of strengthening the competitiveness in logistics under the ASEAN-Japan Partnership arrangement consist of the following four: viz. (i) ASEAN regional logistics network development, (ii) human resources development in logistics business and import/export customs clearance formalities, (iii) introduction of advanced technology for efficient logistics, and (iv) computerization of import/export customs procedures for ASEAN integration.

6) The programs already implemented or under preparation are as follows: (i) introduction of best practices overseas and the outline of CBTA implementation, (ii) lectures on CBTA stipulations, (iii) on-the-job training at border crossing points, and (iv) training of border gate personnel.

(1) **Study of Ongoing Progress and Problems of CBTA Implementation**

- **Background:** The basic institutional framework for developing cross-border traffic has been defined in the ADB-initiated CBTA stipulations. All member countries have already signed the Annex/Protocol of the agreement. The signatories are now at work on ratifying the agreement. Necessary steps toward full CBTA implementation consist of relevant domestic legal enactments pursuant to the ratification and the start of manpower training programs for the next stage of implementation.
- **Aim:** The progress of domestic enactments and CBTA ratification varies among GMS countries, as are the needs for manpower training and capacity development. This area for cooperation aims to accurately understand the current situations in these countries, identify the remaining problems and the possible means to deal with them, and specify areas for external assistance through workshops for government personnel involved in CBTA development in each country.
- **Policy for JICA Involvement:** Financed by the ADB, the roadmap is now being formulated to aid the CBTA implementation in each country. The roadmaps will help clarify what have been in progress or are constraining the progress. It will be necessary for JICA to coordinate and consult with the ADB and other international organizations and to share the up-to-date information on what needs to be done in the sphere of technical cooperation.

(2) **Promotion of CBTA Awareness among Local Government Personnel**

- **Background and Aim:** Many activities in the CBTA implementation rely heavily on provincial and local government personnel. CBTA-related inter-country deliberations have so far been limited to the central government officials, while virtually no attempt has been made to have the facts about CBTA known to provincial and local government officials. This program aims to make local government personnel, especially those who man the border facilities, aware of the needs and the benefits of CBTA implementation.
- **Contents:** The awareness promotion will cover areas of the CBTA implementation that directly concern the local government personnel as follows:
 1. Progress of regionalization in the GMS and the roles of CBTI and CBTA.
 2. Mutual entry and operation of freight and passenger vehicles.
 3. Introduction of CBTA-stipulated traffic regulations and signals along cross-border transport corridors.
 4. Licensing of cross-border transporters and mutual authentication of their licenses.
 5. Standardization of customs, immigration, and quarantine procedures.
 6. Agreed framework of transit cargo handling.
- **Participants:** Overall counterparts of the program will be appointed from among the personnel of the central government in charge of cross-border transport. Workshops will be held for government personnel in the provinces and municipalities located along cross-border corridors and those of border crossing points as stipulated in the GMS CBTA Protocol 1.

(3) **Establishment of Licensing and Permit Systems for Cross-border Transporters**

- **Background and Aim:** The CBTA stipulates that each country should issue licenses to domestic cross-border forwarders and that this authentication should be effective in other GMS countries. However, there are diverse licensing systems in the GMS countries with ill-defined licensing criteria and issuing processes, which are difficult to harmonize. It is necessary therefore to institute a credible licensing system with clear licensing criteria in each GMS country.
- **Contents:**
 1. **Licensing Systems for Domestic Cross-border Forwarders:** Aims to institute a credible licensing system with clear licensing criteria in each GMS country.
 2. **Institutional and Human Resources Development:** Aims to develop organizations that will evaluate the qualification of applicants and process the issuance of licenses.
- **Participating Organizations:** GMS central governments with jurisdiction over licensing of freight forwarder (e.g. Ministry of Transport) and the licensing organs (e.g. ministry bureaus or branches and local government departments).
- **Duration of Cooperation:** The project will take two to three years for institutional development, one year for local personnel training, and another year for follow-up monitoring, or a total duration of four to five years.

(4) **Capacity Development of Domestic Cross-border Forwarders and Strengthening their Associations**

- **Background and Aim:** In order to activate cross-border transport along with the progress of CBTI development, it is indispensable to upgrade the qualification of forwarders. Human resources development of cross-border forwarders is now under deliberation under the framework of the ASEAN-Japan Partnership arrangement for the strengthening of international competitiveness in logistics. JICA might be able to offer assistance toward this attempt at strengthening logistics service providers through a new regional qualifying program.
- **Contents:**
 1. **Licensing and Permit Systems for Domestic Forwarders:** Qualifications required for cross-border transport operation in the Greater Mekong Subregion.
 2. **Logistics Business Strategy:** Courses on logistics strategy, value-added logistics services, quality control methods, training of drivers, etc.
 3. **Business Associations:** Courses on the roles, functions, and activities of business associations (e.g. forwarders and trucking companies).
 4. **Lectures on CBTA:** Outline of CBTA implementation and the changing requirements of customs, immigration, and quarantine procedures.
- **Participating Organizations:** Private companies in the logistics business and their associations.
- **Duration of Cooperation:** A series of short-term workshops (two to three days) in

various cities in the GMS.

(5) Establishment of Domestic Vehicle Inspection Systems

- **Background and Aim:** CBTA implementation stipulates the agreement on mutual entry and operation of transport vehicles between GMS countries. However, the vehicle types and the vehicle inspection systems currently in operation in the region are far from being technologically adequate. These not only obstruct the practice of mutual entry and operation but also inhibit the early emergence of seamless cross-border transport. The institutionalization of more appropriate vehicle inspection systems will overcome this bottleneck.
- **Contents:**
 1. **Vehicle Inspection Systems:** CBTA implementation stipulates that border crossing vehicles be officially registered upon proper inspection in each country regarding their technological requirements. Once authenticated in one country, vehicles must be accepted in other GMS countries. In other words, the vehicle registration and inspection systems will play an important role in expediting regional integration of cross-border transport.
 2. **Construction of Pilot Facilities and Preparation of the Inspection Manual:** System development requires the construction of physical facilities that are fully equipped for vehicle inspection and are conveniently located in each country. The program will construct pilot vehicle inspection facilities and develop an inspection manual to ensure the efficient operation of the system.
 3. **Possibility of Private Sector Participation:** The program will probe the possibility of private sector participation in vehicle inspection and propose the appropriate institutional framework for promoting such participation.
 4. **Nationwide Vehicle Inspection:** The program will promote the integration of vehicle inspection with the vehicle registration system currently in force to ensure nationwide vehicle inspection.
- **Participating Organizations:** Central government ministries that administer vehicle registration and inspection (e.g. Ministry of Transport) and local organs that issue inspection certificates (e.g. bureaus of central ministries or local government departments).
- **Duration of Cooperation:** Cooperation will take two to three years for institutional development and parallel construction of pilot facilities, one year for local personnel training, and another year for follow-up monitoring, or a total duration of four to five years.

(6) Capacity Development and Provision of Equipment at Border Crossing Points

- **Background and Aim:** Full CBTA implementation is ultimately dependent upon the capability of personnel at various border crossing points. Some training programs have already been launched by the ADB, AusAID, and others, but they are mostly short-term, of the workshop type, and fall short of the needed capacity development of the entire border personnel in the region. Long-term programs to develop human resources are also needed for relevant departments in the central government ministries.

- **Contents:**

- 1. Training Programs:** The overall framework of training programs is presumed to have been well defined by the efforts of the ADB and other international donors. JICA cooperation should consider the expansion of border personnel training to other locations pursuant to this framework. It is necessary to design training programs after ascertaining different local requirements at major border crossing points in the GMS. Training programs should be prepared in the order of priority assigned to these border crossing points.
 - 2. Training at Border Crossing Points:** Training programs will be conducted at the selected priority border crossing points.
 - 3. Provision of Equipment:** Along with border personnel training, adequate equipment (computers, communication apparatus, inspection tools, etc.) is needed to equip border facilities.
 - 4. Public Information Service to Users:** Information must be made available for users of border procedures. Specifically, information on the framework of SSI and SWI and the standardized forms required must be provided in pamphlets or other means.
- **Participating Organizations:** The focus of training will be determined in consultation with the central customs bureau of each GMS country. Training itself will be provided at major border crossing points. Public information service will be mainly aimed at cross-border forwarders, tourist companies, and commercial establishments in the border areas.

(7) **Customs Risk Management**

- in some GMS countries customs clearance imposes inspection on the entire cargo. This practice will soon become unrealistic as cross-border freight transport expands in the future. It is necessary to design efficient methods for customs inspection together with risk management, which is also effective in preventing smuggling and tariff evasion. JICA is currently developing a technical cooperation project on customs risk management for Vietnam and other countries, and this proposed technical cooperation program might be carried out in conjunction with that project.

(8) **Introduction of ICT Technology**

- **Background and Aim:** ICT technology is now indispensable for the speedup and accuracy of border procedures, for advanced exchange of information, or for the “single window” processing among relevant authorities. The introduction of EDIs (electronic data interchanges) has already begun experimentally for port customs in Thailand, Vietnam, and elsewhere, which is expected to expand to land border crossing points. Lao PDR, Cambodia, and other low-income countries must not be slow to take advantage of the electronic communication technology.
- **Policy for JICA Involvement:** Under the ASEAN-Japan Partnership arrangement, discussions have been going on to clarify the issues involved in the “single window” processing of customs data and other information needed in international logistics and to evaluate the merit of introducing RFID (radio frequency identification). JICA cooperation might address these issues.

(9) **Institution Building to Facilitate Construction of Bonded Logistics Terminals and Industrial Estates**

- **Background and Aim:** To simplify and speed up border procedures and facilitate the CBTA-proposed agreement on transit cargo handling, freight terminals and industrial estates with bonded warehousing function will play a major role in allowing transit cargo sealed at bonded terminal facilities to pass the borders without undergoing customs procedures. At present, however, most GMS countries are institutionally constrained from establishing such bonded facilities in the border areas. JICA cooperation will deal with the appropriate institutionalization necessary for the establishment and management of bonded facilities. Logistics terminals to be provided in the border areas could also serve as points of transshipment for mixed loading.

Topics for Consultation and Discussion:

1. **Progress of Regionalization:** Ongoing regionalization in the GMS countries will be reviewed to clarify the present situation of regional trade and other socio-economic interactions, and the prospects for the GMS will be ascertained by partly referring to notable examples in Europe and Latin America.
 2. **Present Cross-border Transport Infrastructure:** The present conditions and bottlenecks in cross-border infrastructure (i.e. mainly roads), border facilities, and logistics infrastructure in each GMS country will be presented. Regional issues will be abstracted from these presentations and discussed.
 3. **Progress of CBTA Implementation:** The progress of CBTA implementation in each GMS country will be presented viz. ratification of CBTA annexes and protocols, domestic legal enactments, availability of ADB and other external financing, etc. Discussions will extend to other international agreements on cross-border traffic other than the GMC and multi-country agreements among ASEAN countries, such as the ASEAN Framework Agreement on the Facilitation of Goods in Transit, the ASEAN Framework Agreement on Multimodal Transport, and other bilateral agreements. Discussions on the relative merits and shortfalls of these intercountry arrangements will help narrow down the areas suitable for JICA cooperation.
 4. **Current Situation of International Logistics Business:** The present condition of logistics business in each GMS country will be presented viz. capacity of domestic forwarders, presence of multimodal operators, degree of participation in international and cross-border logistics, etc. The needs for human resource development in the logistics sector will be clarified from these presentations.
 5. **Cross-border Transport Infrastructure and Regional Development:** The possible impacts of CBTI development on the regional economy will be spelled out in clear terms by referring to known good practices and lessons gleaned from past experiences. This can be fed to the regional development planning integrated with CBTI development.
 6. **Significance of Two Model Routes:** Discussions will center on the socio-economic significance of the two model routes for the areas in the vicinity and vis-à-vis the framework of GMS regional economy, including the present condition of infrastructure development (including projects under construction and in the planning stage) on these routes. This will help clarify what could and should be done in the future.
 7. **Issues for Regional Development:** The development requirements along the two routes will be discussed under three headings, namely regional and infrastructure development, institution building, and capacity development. Primary emphasis must be placed on regional development needs in Lao PDR and Cambodia.
- 2) **Development Studies on an Integrated Regional and CBTI Development**
- (1) **Background**
- Development studies on CBTI-related regional development with focus on Lao PDR and Cambodia will basically use the methods of analysis and programming similar to those used in past JICA studies on regional development elsewhere. The difference lies in the climate of GMS integration and economic partnership in which the two model routes are to function. In other words, regional development projects somewhere along the two routes could help growth centers to emerge in the process of regionalization

and help strengthen the countries' competitiveness in international logistics.

In Lao PDR, for example, the completion of the Second Mekong Bridge removed the last major bottleneck in the east-west corridor, while the construction of the north-south corridor is making progress with Chinese assistance. With due intercountry agreement on transit cargo handling, the cross-border transport barriers in Lao PDR could be substantially lowered, raising in turn the country's competitiveness. Under the circumstances, it is especially important to formulate a regional development program that will bring quick results. In Cambodia, the construction of another bridge crossing the Mekong is scheduled to start in Neak Loeung before long, justifying the same argument for CBTI-related regional development.

(2) Importance of Regional Development Programs

The regional development programs in Lao PDR and Cambodia must aim to seize the impacts of CBTI development as a springboard for expanding domestic flows as opposed to transit cargo, as well as of export and import and for acquiring a competitive edge. The programs must be designed to provide the local population opportunities to share the benefits of CBTI development along the two routes. In order to maximize the positive impacts of CBTI development while minimizing the expected negative impacts, it is essential that all stakeholders share an understanding of what is being planned and what is expected to be gained by the proposed development efforts, which in fact signifies the primary importance of any development program. The regional development programs, in other words, should present a readily understandable menu of development, including the creation of employment opportunities and the specific improvements in living standards.

(3) Contents of Development Studies

The proposed development studies in Lao PDR and Cambodia should cover the following seven subjects:

- 1. Review and Analysis of Present Socio-economic Trends in the Greater Mekong Subregion:** In view of the growing importance of economic integration and partnership among GMS countries, it is necessary to review and analyze the socio-economic indices in the GMS.
- 2. Review of National Development Plans in the GMS Countries:** Each GMS country has its own national development plan and regional development policy stance, which have the overriding importance in influencing the socio-economic prospects in the country and the regions therein. However, these prospects or the respective visions of individual countries are not entirely compatible with the socio-economic framework of the GMS as a whole. Therefore, it is necessary to review the respective national development plans and regional development policies from a regional viewpoint as can be gleaned from ongoing and future expansion of cross-border traffic.
- 3. Present Situation of Cross-border Freight and Passenger Traffic:** Because the two model routes selected for regional development are of road transport, it is necessary to understand the present volumes of freight and passenger flows in GMS countries and forecast the future volumes. It is necessary to determine the traffic volume per pair of major city-origin and city-destination by noting four

important considerations, among others. First, cross-border traffic is as yet a small portion of the total freight and passenger traffic generated within each GMS country. Second, it is necessary to consider the choice of road over aviation, shipping, and inland waterway transport for cross-border traffic. Third, cross-border traffic flows reflect the route selection and the modal choice necessitated by various types of traffic barriers. Fourth, routings for international logistics are designated, such as Asian Highway or ASEAN Highway network.

4. **Transport Network to Promote Regional Development:** The present and the future land transport links for international logistics will be identified in Lao PDR (or Cambodia) and the appropriate zoning of the country will be done to formulate the regional development strategy. Land transport is basically by road in land-locked Lao PDR. However, a transport network to frame the regional development strategy will take into consideration the possibility of railways and inland waterways.
5. **Possible Growth Centers of International Logistics:** Lao PDR has long depended on the Vientiane-Thanaleng-Nong Khai-Bangkok route for export and import trade. When the CBTA takes effect in Vietnam, it will be possible for Lao PDR to route its export and import as transit cargo via the Second Mekong Bridge or to and from Vung Ang Port or Da Nang Port. It might even be possible to use the Kao Cheo-Kho Neua-Vinh route and the Savannakhet-Densavanh-Lao Bao-Don Ha route. Savannakhet and Vientiane have been designated as centers of international logistics in Lao PDR. The east-west corridor connecting Thailand and Vietnam and the north-south corridor connecting Yunnan in China and Bangkok are now beginning to attract increasing attention within the framework of developing regional corridors in the GMS. For the future socio-economic prospects of the GMS, it might be reasonable to select subroutes with additional centers of international logistics in Lao PDR to support these two major regional corridors.

Cambodia is different from Lao PDR because of its Sihanoukville Port. Coastal corridor development is now in progress to connect Thailand to Vietnam via Cambodia. It might thus be necessary to consider other centers of international logistics in addition to Phnom Penh and Sihanoukville.

6. **Programming of Regional Development:** The programming of regional development in Lao PDR and Cambodia must begin by reviewing from the viewpoint of international logistics, conventional regional development program such as promotion of local industries, institutional development for investment promotion, infrastructure to support economic activities, decentralization, strengthening of regional integration, and human resource development. "Strengthening of regional integration" is translatable as strengthening of competitiveness. The framework of regional development programming is determined with emphasis on special economic zones, logistics parks, distribution terminals with bonded warehouse, and other economic infrastructure development.
7. **Feasibility of Logistics Terminals:** A logistics terminal must be proposed as a financially viable business model to ensure the sustainability of its operation and management. The project development studies assume an implementation through the PPP scheme.

3) Institution Building and Capacity Development

(1) Training Programs Related to CBTI and Regional Development

Aim: Training aims to provide participants with an understanding of what is required in the growing regionalization among GMS countries and what needs to be done to promote regional development that is integrated with CBTI development, such as economic infrastructure, service industries, and institution building, to attract industrial investment.

Participating Organizations: Government personnel and private sector operators (central ministries of transport and commerce, local government departments, business associations, etc.), particularly those who participate in or cooperate with the ongoing development studies.

Contents of Training:

- 1. Preparation of Country Report:** A country report will be prepared by the participants, which should cover the ongoing progress of CBTI development, existing special economic zones, and institutional incentives for industries.
- 2. Regional Development Strategy amid Regionalization:** Lectures will explain the need for a regional development strategy that is formulated from the perspective of growing regionalization; the need, for example, to analyze the resources and industrial locations in a given area in comparison with other areas in a given country and in terms of intercountry advantages.
- 3. CBTI and Regional Development:** Lectures will spell out the expected impacts of CBTI development on regional economy, by referring to known good practices and lessons learned from experiences in the GMS and elsewhere. This is to acquaint the participants with the characteristics of a CBTI-related regional development approach.
- 4. Logistics Service Facilities as Growth Centers:** Lectures will explain what to establish as CBTI-related regional centers, namely infrastructural facilities (e.g. ICDs and industrial estates) and logistics service facilities for freight consolidation and multimodal transport.
- 5. Institutional Improvement to Attract Industrial Investment:** To be internationally competitive, growth centers need to attract foreign direct investment in addition to local industries based on resources in the hinterlands. Lectures will deal with institutional incentives to attract foreign industries and other types of institutional development needed in growth centers.

Duration of Training: About one month.

(2) Capacity Development Programs for the Operation of Passenger and Freight Terminals in Lao PDR and Cambodia

Aim: The establishment of a passenger and freight terminal (or terminals) in association with the development of an industrial estate (or industrial estates) in border areas is integral to CBTI-related regional development programs already proposed for Lao PDR and Cambodia. JICA technical cooperation in terminal operation is outlined below.

Participating Organizations: Organizations operating terminals and government

ministries supervising terminal operation.

Contents of Training:

- 1. Operation of Bonded Facilities:** Training will teach participants how to operate a bonded transshipment facility for international freight (crossing three or more borders) and a bonded warehouse for an industrial estate. It will also include the management of a branch customs office.
- 2. Operation of Terminal Facilities:** Training will educate the top management of the terminal(s) regarding efficient and effective operation and the terminal staff regarding logistics services (marketing, storage, packing, and information), with emphasis on the establishment of computerized information services.

Duration and Place of Training: Three to four years until terminal operation is proven sustainable.

4) **Model Building for Strategic Cross-border Transport Planning**

(1) **Training on CBTI Development Planning**

Aim: The training will impart theories and methods of traffic demand forecast and impact assessment applicable to CBTI development. It will also indicate the present data inadequacies in GMS countries constraining a quantitative analysis and evaluation on which to base transport planning.

Participating Organizations: Government officials of GMS countries that are and will be responsible for CBTI-related planning (e.g. GMS ministries of transport, relevant research and planning institutes under such ministries, etc.).

Contents of Training:

- 1. Present CBTI Development Planning:** Lectures will clarify the different requirements of CBTI planning compared with the conventional approaches to transport planning.
- 2. Model Building for CBTI-related Demand Forecast:** Lectures will explain the methodology of model building for CBTI-related demand forecast, including its difference from the usual practices, and clarify the limitations and problems that constrain the model building for the GMS regional transport planning, indicating what could be done.
- 3. Analysis and Evaluation of Impacts:** Lectures will compare the methods of impact analysis and evaluation as applied to CBTI development (case studies of project evaluation by GMS countries and external donors) and indicate the limitations of the available methods in evaluating cross-border impacts and what could be done to remedy the situation.
- 4. Necessary Data Development:** Available statistics and the databases prepared in GMS countries will be cross-examined to clarify the problems in order to cope with the eventual buildup of a GMS database needed for plan formulation and project evaluation.

Duration of Training: About one month.

(2) **Technical Cooperation Program on CBTI Monitoring**

Aim: Monitoring of the impacts of CBTI development has not been sufficient and the

available statistics are extremely limited and sporadic. This technical cooperation program aims to collect and prepare the database needed for quantitative analysis, including the forecast of CBTI-related traffic demand and the evaluation of development projects and programs. During the initial stage, when the availability of region-wide information is hardly expected, it is necessary to observe selected corridors where the impacts of CBTI development would be largest. (preferably sections along the above model routes). Monitoring of logistics flows along the corridor(s) and socio-economic changes in the vicinity will be carried out over several years. The data collected could be used as the baseline in assessing the impacts of CBTI development and the reduction of cross-border barriers.

Participating Organizations: Government officials of GMS countries that are responsible for CBTI-related planning (e.g. GMS ministries of transport, relevant research and planning institutes under such ministries, etc.).

Contents of Training: Since this program will assume a long period of monitoring and follow-up activities, the assignment of Japanese experts will have to last from five to ten years. In addition, the program should be open to wider participation, for example those who will attend the training on CBTI development planning mentioned immediately above.

1. **Selection of Baseline Data:** Available statistics in GMS countries will be cross-checked to create a regional baseline database to be used in building a strategic cross-border transport planning model.
2. **Route Selection for Monitoring:** The pilot route selection will consider three criteria: (i) Selection will be made from among the officially recognized regional corridors or their important routes; (ii) CBTI development should be underway or about to start; and (iii) CBTI-related regional development should be in progress or about to start.
3. **Monitoring Surveys:** The database will be compiled from available sources and the findings of regular field surveys on the model route(s). In order to extend the coverage of the database to include the entire country and eventually the entire GMS, it will be necessary to conduct surveys to identify the categories of information necessary for a wider database compilation.
4. **Continued Research:** Research will continue for long-term regional transport planning.

Duration of Cooperation: The technical cooperation program will last for two to three years and will be followed by the assignment of Japanese experts lasting from five to ten years.

5) **Strengthening of International Competitiveness in Logistics**

Formulation of an Action Plan: The performance of regional development programs closely tied to the two selected routes will depend heavily on the establishment of logistics facilities which will serve to strengthen a country's competitiveness in international logistics. In recent years, some local subsidiaries of Japanese and other foreign logistics companies have undertaken field surveys on the logistics flows or trial runs on the GMS regional economic corridors. The findings of these attempts help ascertain the present and real needs of logistics businesses in the GMS. Based on their findings and additional

information from other sources as well as consultations with local logistics service providers, it is possible to formulate an action plan to strengthen the international competitiveness in logistics of GMS countries.

The action plan will include the construction of freight terminals, training programs for customs personnel at border crossing points and elsewhere, strengthening of logistics business associations and networking, human resource development support to local forwarders, and so on.

6) **Measures to Counteract Negative Impacts**

JICA cooperation is proposed on the following areas with the implementation focusing on the vicinities of the two model routes, keeping in view the vicissitudes in the GMS as a whole:

Measures against Straw Effects: Lao PDR and Cambodia are likely to suffer most from this negative impact after the complete linkup of the economic corridors. JICA cooperation can be effected, for example, through regional development programs along the two routes as one of the priorities in the development strategy and integrated with the development requirements of logistics centers and other major projects.

Traffic Safety Measures: The expected expansion of cross-border traffic is likely to result in an increase in traffic accidents. A comprehensive approach to traffic safety will be necessary, including enforcement of traffic regulations, public campaigns on traffic rules, training and education of drivers, and so on.

Informal Sector Activities: The expected benefits of a growing cross-border freight and passenger transport are likely to bypass the majority of people who eke out their living in the informal sector. Informal activities need to be absorbed into the formal sector by instituting appropriate incentives for small business operators and rural industries and by providing the local population with various opportunities for job training.

Spread of Infectious Diseases: The intensified movement of goods and people across the borders will hasten the speed and the reach of virulent diseases, most notably HIV/AIDS and avian influenza. Public awareness campaigns and preventive health care will be most effectively performed by joint efforts between JICA and NGOs, as exemplified by the JBIC and NGO partnership during the construction of the Second Mekong Bridge.

5. Applicability to Other Regions

Cross-border transport and international trade in the Greater Mekong Subregion have just begun to pick up, but are yet nowhere near the levels observed in the European Union and elsewhere in the developed world. As will be described later, the socio-political stabilization of some GMS countries since the 1990s (e.g. cessations of civil wars) and the open market policies proclaimed in the socialist nations served in no uncertain measure to raise the pace of globalization / regionalization in the subregion. This inevitably accelerated the subregional division of labor and heightened the awareness of the need to activate international trade. Partly facilitated by the assistance from the ADB and other external donors, GMS governments launched their drive for CBTI / CBTA implementation. The private sector of the subregion welcomed these efforts and has been increasing their investments. In other words, the ongoing regionalization is partly endorsed by the government policies and partly put into action by the private investors. It is too early yet to evaluate the results of ongoing efforts in precise detail. However, the joint actions of the public and the private sectors toward closer regional integration through GMS CBTI / CBTA implementation undoubtedly have an important bearing on other developing regions and contain some useful lessons for the latter's regional economic development. This chapter analyzes the available information on the ongoing CBTI / CBTA implementation in the Greater Mekong Subregion from the viewpoint of forming a salient perspective on regional development geared to CBTI and CBTA implementation. The findings will be of some practical use for the other developing regions to take into consideration.

5.1 Salient Lessons from GMS Experiences

1) Backgrounds of GMS Promotion of Cross-border Transport

GMS countries have been actively taking various measures to promote cross-border transport. Their efforts encompass a wide range of achievements, including the construction of such basic infrastructure as bridges over the Mekong and border-crossing arterial roads, and building and equipping customs houses and CCAs at border crossing points. They agreed on new institutional arrangement by signing and ratifying the CBTA and bilateral Minutes of Understanding (MOUs), formulated CBTI / CBTA-related regional development programs, and initiated all sorts of institutional improvement and manpower training necessary to expedite the regionalization process, which picked up its pace in the latter half of the 1990s. This was brought about by the following convergence of events in the subregion.

The peace in the subregion was achieved with the cessation in 1991 of the civil war in Cambodia. Prior to this, the Vietnam War lasted long until 1975, while insurgences of minorities and confrontations with the communists persisted in Myanmar. GMS countries other than Thailand had socialist regimes of one kind or another in power, but their policy stances began to change since the mid-1980s. Vietnam introduced its *Doi Moi* (reform) policy in 1986, and Lao PDR announced its *Chintanakan Mai* (new thinking) policy in the same year. Myanmar disclaimed its Burmese Socialism in 1988, and Cambodia adopted its policy of open market economy in 1993. Concurrently, China began pursuing its socialist market economy path since 1992. These decisive actions in various parts of the subregion converged to create a milieu that was ready to accept the subregional economic development approach through market mediation.

Then Prime Minister Chatchai of Thailand made a public appeal to “convert Indochina from a battlefield to a market,” while the ADB took it upon itself the task of coordinating the interests of the GMS countries, thereby facilitating reconstruction and growth of the subregion as a whole. In no time, the meeting of economic ministers from six countries was held in 1992, leading to the subsequent formulation of the GMS economic cooperation program. Around this time, Japan expressed its strong commitment to cooperation for such efforts to take off.¹⁾ In subsequent years, four more countries joined ASEAN.²⁾ This enlarged membership made it increasingly possible to discuss the issue of a GMS economic development within the ASEAN framework. The ADB, Japan (JBIC / JICA), World Bank, and other donors stepped up their financial support to the infrastructure development and provided technical assistance on institutional development, actively facilitating the socio-economic development in the subregion. At the same time, the private sector in the subregion expanded its investments and accelerated its economic activities with the completion of the Second Mekong International Bridge and other arterial infrastructural facilities. Because international trade has a significantly larger share in the low income economies, like Lao PDR and Cambodia, regional development integrated with CBTI / CBTA implementation should be of special importance for them.

2) Basic Conditions as Evinced in GMS Experiences

As mentioned above, there appeared to have been a convergence of certain requisite conditions predating the advent of globalization and regionalization with the growing cross-border transport in the Greater Mekong Subregion. Other regions will have to be blessed with such basic conditions to follow the GMS course of regional development. If any one of the basic conditions should be absent in a given region, and unless such a situation is remedied soon, it would be near impossible to facilitate an integrated cross-border transport and regional development.

A. Peace must prevail in a region.

Since the end of World War II the Greater Mekong Subregion was almost continuously troubled by one conflict after another. Vietnam fought nearly a decade of war with France (1946 – 1954) and underwent 15 years of Vietnam War (1960 – 1975). Lao PDR was mired in incessant conflicts fought between the government army and the Pathet Lao. Cambodia suffered a series of civil wars variously involving Lon Nol, Sihanouk, Pol Pot, Hen Samlin, Son San, and others, in which Vietnam intervened at one time (1978). The cessation of the Cambodian civil war had to wait until 1991 when the Paris Peace Treaty was finally signed. Myanmar had to fight insurgent minorities and communists over the same period. Under such circumstances, it is hardly possible for most GMS countries to pursue a steady course of economic development. Thailand alone managed to remain more or less peaceful and benefited from economic growth, partly stimulated by the continued inflow of foreign direct investment (FDI). The process of globalization began to make strides in the latter half of the 1990s when overall peace came to prevail in the subregion.

B. Investors must be present in a region (or countries in the region must have natural, industrial, and human resources worth investing in) and they must be capable of

¹ In January 1993, the then Prime Minister Miyazawa visited the ASEAN countries and proposed the establishment of a Forum for Integrated Development of Indochina.

² Vietnam joined ASEAN in 1995, Lao PDR and Myanmar in 1997 and Cambodia in 1999.

increasing their investment apace with improvement in the investment milieu.

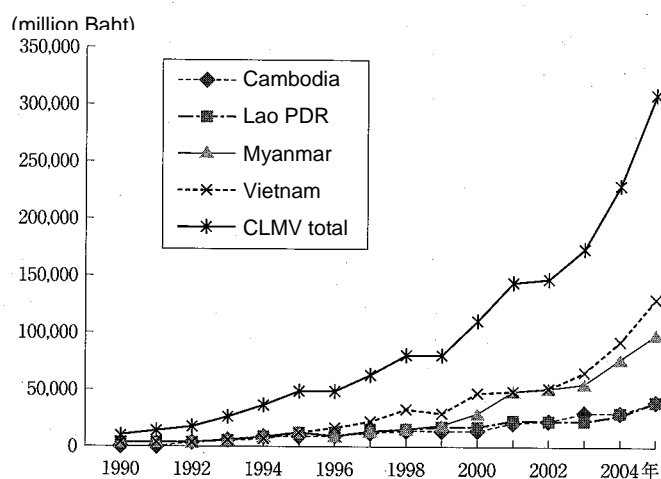
Table 5.1.1 shows the FDI trend in GMS countries (excluding China) during the period before and after peace was restored in the subregion. Except for Thailand where economic growth had been steady, FDI began to pick up in GMS countries immediately before or after the time of the Paris Peace Treaty.³⁾ Along with this trend, the trade between Thailand and other GMS countries (i.e. Cambodia, Lao PDR, Myanmar, and Vietnam) began to expand as shown in Figure 5.1.1.

**Table 5.1.1 Trend of Foreign Direct Investment in GMS Countries:
Before and After Restoration of Peace (1989 – 1999)**

	(US\$ million)																
	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05
Cambodia	-	-	-	33	54	69	151	294	204	243	232	149	149	145	84	131	379
Lao PDR	4	6	7	8	30	59	95	160	86	45	52	34	24	25	20	17	28
Myanmar	8	161	238	172	105	126	277	313	391	318	256	258	210	152	252	214	300
Thailand	1,776	2,444	2,014	2,113	1,804	1,366	2,068	2,336	3,895	7,315	6,103	3,366	3,892	953	1,949	1,718	4,527
Vietnam	4	16	229	385	1,002	1,936	2,349	2,395	2,222	1,671	1,412	1,298	1,300	1,400	1,450	1,610	1,954

Source: ADB, *Development Indicators*.

**Figure 5.1.1 Trade of Thailand with Cambodia, Lao PDR, Myanmar, and Vietnam
(1990 – 2005)**



Source: ISHIDA Masami and KUDO Toshihiro, *Economic Cooperation in Greater Mekong Subregion*, Institute of Developing Economies, 2007

It must be noted that the growth of FDI became apparent prior to the political decisions over regionalization by GMS governments mentioned above. In other words, private investments were quick to respond to the sure possibility of peace, driven by the pace of globalization in the world, and they did not wait for the public pronouncement of the GMS governments' commitment to regionalization.

The presence of Thailand, the country that had readily made use of FDI and performed well in economic development, undoubtedly served to expedite the process of globalization / regionalization and to consolidate the GMS commitment to CBTI / CBTA implementation. In addition to those foreign investors who had been successfully operating in Thailand, Thai investors began to provide capital for various

³ FDI growth after 2000 was not very substantial, or rather more or less stagnant. Note the impact of the Asian economic crisis in 1997.

business opportunities in the neighboring countries⁴). GMS countries other than Thailand have labor supply of reasonable quality at low cost and exploitable natural resources⁵). This ready mix of complementary resources available in the subregion facilitated the formulation and implementation of a variety of policies and programs on regionalization.

Another important point is that the initial FDI was quickly followed by new infrastructure development and necessary institutional arrangements like the CBTA, which in turn stimulated the flows of FDI into the subregion. In other words, the favorable investment environment evolved to sustain continuous economic growth.

- C. Countries in the region share the political will to cooperate and collaborate with one another toward regionalization (sharing of common development strategy).

After World War II, Vietnam, Lao PDR, Cambodia, and Myanmar chose their respective blends of socialism for nation building, but their management of nationalized enterprises and collective farming was before long mired in debilitating inefficiency and their economic performance suffered. The aftereffects of past economic debilitation still persist, but these countries began to rectify the situation by announcing their commitments to market mechanism: namely, *Doi Moi* of Vietnam (1986), *Chintanakan Mai* of Lao PDR (1986), repudiation of Burmese Socialism by Myanmar (1988), and market-oriented economic management in Cambodia (1993). China also proclaimed its socialist market economy path. It must be noted that these policy reorientations took place with the restoration of peace in the subregion. Given the assurance of regional peace, their aspirations to achieve sustainable economic growth necessarily stimulated globalization / regionalization. Their synchronic efforts of similar inclination made it possible to share a common direction for development strategy and culminated in the CBTI / CBTA implementation in the subregion as a whole.

- D. There must be an effective facilitator that acts as a provider of financial and technical assistance and as an arbitrator for the countries in the region (it could be an international organization, a leading country in the region, or both).

The Greater Mekong Subregion is blessed with the presence of the ADB, which effectively coordinated and facilitated the process of regional reconstruction and development. It also contained Thailand which could have played an important role in fostering regional cooperation and coordination. These conditions served to expedite the relatively smooth startup of globalization / regionalization and in the process made it possible to focus on CBTI / CBTA implementation fairly quickly. Many developing countries are poorly equipped to collect accurate information on their own and to express it to the outside world. They might find it difficult to communicate and deliberate effectively with neighboring countries. Divergent ethnic, political, religious, and historical backgrounds among them might require neutral arbitrators for communication and cooperation. If some arbitrating organization already exists in a

⁴ For example, Thai capital has been invested in power generation in Lao PDR and textile processing industries in Cambodia.

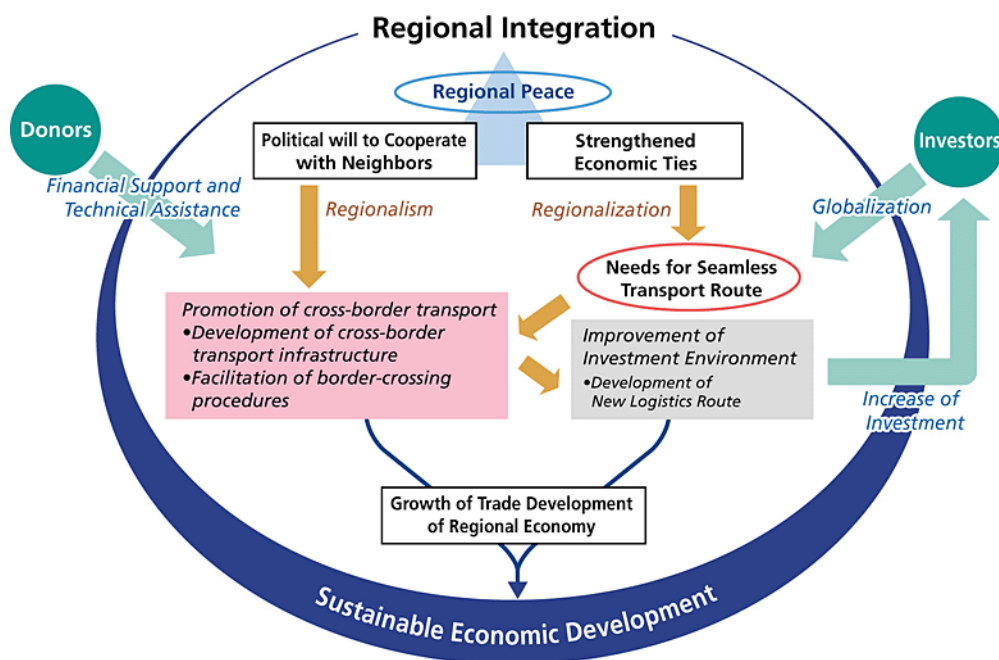
⁵ There are hydropower and mineral resources in Lao PDR, mineral resources (including petroleum and natural gas) in Cambodia, and agricultural and tourism resources in every country.

given region, it is possible to strengthen its functions toward supporting regionalization. If such an organization is moribund, or its mandate does not exactly coincide with a collection of countries getting together for regionalization, it would be necessary to set up an organizational framework for effective coordination before taking any specific step toward regionalization.

3) Interrelationships of Basic Conditions

The four basic conditions described in the preceding paragraphs are necessary for CBTI / CBTA implementation. In the Greater Mekong Subregion, the ongoing CBTI / CBTA implementation was not explicitly planned during the initial stage of regionalization. Actually, the development of cross-border transport infrastructure and the implementation of cross-border transport agreement only began in earnest after the process of globalization / regionalization took some hold in the subregion. Figure 5.1.2 shows the interrelationships between the four basic conditions. Most indispensable are “Restoration of Regional Peace” and “Presence of Investors (Presence worth Investing).” These conditions materialized first in the Greater Mekong Subregion. Next in importance is “the Political Will to Cooperate with Neighbors (Sharing of Common Development Strategy),” which signifies the public acceptance of globalization / regionalization. By this stage, private investors had already started their activities, and continued to expand them along with the progress of CBTI / CBTA implementation and the improvement of investment environment. The fourth condition, “Presence of a Provider of Financial and Technical Assistance,” was fulfilled foremost by the ADB and then by other donors, like Japan and the World Bank, as seen in the Greater Mekong Subregion. Such donors are needed as arbitrators and facilitators to provide effective linkage between the other three conditions. Their coordination and arbitration also play a decisive role in putting together CBTI / CBTA planning and implementation once the member countries proclaim their political commitment to regional cooperation.

Figure 5.1.2 Interplay of Four Basic Conditions for CBTI / CBTA Implementation



The GMS experience in CBTI / CBTA implementation can be applied to a region in Africa or elsewhere as follows.

1. It must be ascertained first whether the two requisite conditions, “Restoration of Peace” and “Presence of Investors,” are satisfactorily met in a given region. If these conditions are lacking, the focus of external donors must be placed on those measures to restore peace, improve primary education, and explore natural resources.
2. It must be ascertained next whether the countries of a given region have proclaimed their political will to cooperate in regionalization efforts. If they have not done so, it is necessary to find their reasons. When it is found that some deep-rooted enmity (such as long-standing ethnic or religious conflicts) prevents the fostering of such political will among the neighboring countries, there is little chance to succeed in assisting CBTI / CBTA implementation.

For example, a number of subregional organizations have been established in Africa: namely ECCAS⁶⁾ in Central Africa, ECOWAS⁷⁾ in Western Africa, SADC⁸⁾ in Southern Africa, COMESA⁹⁾ in Southeastern Africa, and so on. These subregional organizations are affiliated to the African Union¹⁰⁾ and have been promoting regionalization in cooperation with the African Development Bank and other donors. NEPAD¹¹⁾ was formed in 2001 mainly by African countries of relatively large economy. This organization aims at African regeneration based on African ownership. This political stance is well received, but the interests of small African countries are poorly represented in the organization. In order to assist in the projects and programs pertaining to CBTI / CBTA implementation in Africa, it is necessary for JICA and other donors to understand the activities and the intentions of the relevant subregional organization and NEPAD.

3. The fourth condition, “Presence of a Provider of Financial and Technical Assistance,” is adequately met in most of the developing regions of the world. However, the available regional framework which provides assistance and facilitates cooperation might not be functioning as it should be. Such deficiency might be derived from the relationship between such providers and recipient countries (discrepant notions of development priorities and goals, outstanding external debts, etc.), or it might be rooted in some domestic disturbance or serious inadequacy of a given country (law and order problems, socio-political destabilization, poor governance, etc.). In such cases, it is crucial to examine the factors that hinder the effective functioning of regional organizations and to assess the possibilities of rectifying the situations.

In the case of Africa, for example, it is important to understand the agenda of activities and the respective visions of the African Development Bank, EU countries, World Bank, and other donors that are operating in Africa.

⁶ The acronym stands for Economic Community of Central African States, established in 1983.

⁷ The acronym stands for Economic Community of West African States, established in 1975.

⁸ The acronym stands for Southern African Development Community, evolved in 1992 from SADCC (Southern African Development Coordination Conference) established in 1980.

⁹ The acronym stands for Common Market for Eastern and Southern Africa, established in 1994.

¹⁰ Organized in 2002 from the basis of the OAU (Organization of African Unity) established in May 1963.

¹¹ The acronym stands for New Partnership for Africa's Development.

5.2 Necessary Information for Application

1) General Information

Cross-border transport infrastructure development and the related regional programs require a wide range of information. Table 5.2.1 lists the types of necessary information.

Table 5.2.1 Necessary Information for CBTI Development and Related Projects

Aspect	Specific Information Needed
Natural Conditions	• Geography • Land Area • Climate
Cultural Conditions	• Ethnicity • Religion • Language • History
Socio-economic Conditions	• Population • Migration • Labor Force • GDP • Industrial Structure • Poverty • Economic Growth • Foreign Direct Investment • External Trade (trade items, quantity and value, trading countries, etc.) • Fiscal Conditions (revenue and expenditure)
Institutions	• Administrative Structure • Tariff System • Regional Organization and Activity • CBTA • Environmental Consideration • Transport-related Institutions
International Aid	• Japan • Multilateral Organizations • Sectors • Projects / Programs
Relations with Neighboring Countries	• Relative Economic Position • Bilateral Relationships • Political Relationships
Regional Development Planning	• National Development Plan • Donor Initiatives • Projects / Programs
Transport Infrastructure (notably, CBTI)	• Present Conditions (roads, ports, railways, terminals, ICDs, airports) • Present Traffic Volume / OD • Present Cross-border Traffic • Development plans
Others	• Present Logistics Businesses (shippers & forwarders) • Present Transport Vehicle Ownerships • Present Informal Sector • NGO Activities

The list is quite extensive, but the types of required information will naturally vary depending on the nature of a development project or program. The construction of an international border crossing road must consider competing alternative routes. Therefore, the availability of information on the present road conditions and traffic volumes and the relevant development plans will be critical. The program formulation to counteract the cross-border transmission of infectious diseases will require the present conditions of the informal sector and the ongoing campaigns and programs of NGOs.

Detailed data needed for a particular project could be collected by a field survey during the period of project preparation and designing. It is nonetheless necessary to have a rough grasp of wide-ranging general information from the initial stage of development planning. A rough understanding of wide-ranging information or its availability will point to where and how to start up a project identification as well as what to include in the project design.

2) Three Important Issues for the Analysis of Information

Even if the wide-ranging information mentioned above should be successfully obtained, it would hardly be likely to get useful pointers only from the information itself. The reality and the expected impacts of CBTI / CBTA implementation must be understood prior to taking specific actions. The following is a brief description of three major issues involved in CBTI / CBTA planning and implementation:

(1) Impacts of CBTI/CBTA Implementation

Figure 5.2.1 shows the graphic images of changing regional integration brought about

by the progress of CBTI / CBTA implementation in the Greater Mekong Subregion. Before the implementation began, GMS countries were like islands distanced from each other by strong border crossing barriers. By the time of complete implementation, however, GMS countries would have formed a tightly knit subregion, with their border crossing travel time drastically reduced.

Prior to applying the GMS approach to other regions, it is necessary to grasp the existing border crossing resistance between countries and to estimate how far the travel time could be shortened by reducing the cross-border barrier. The reduction of border crossing barrier and the shortening of travel time basically define the nature and the extent of the impacts accruing from CBTI / CBTA implementation.

(2) Transport Mode Selection

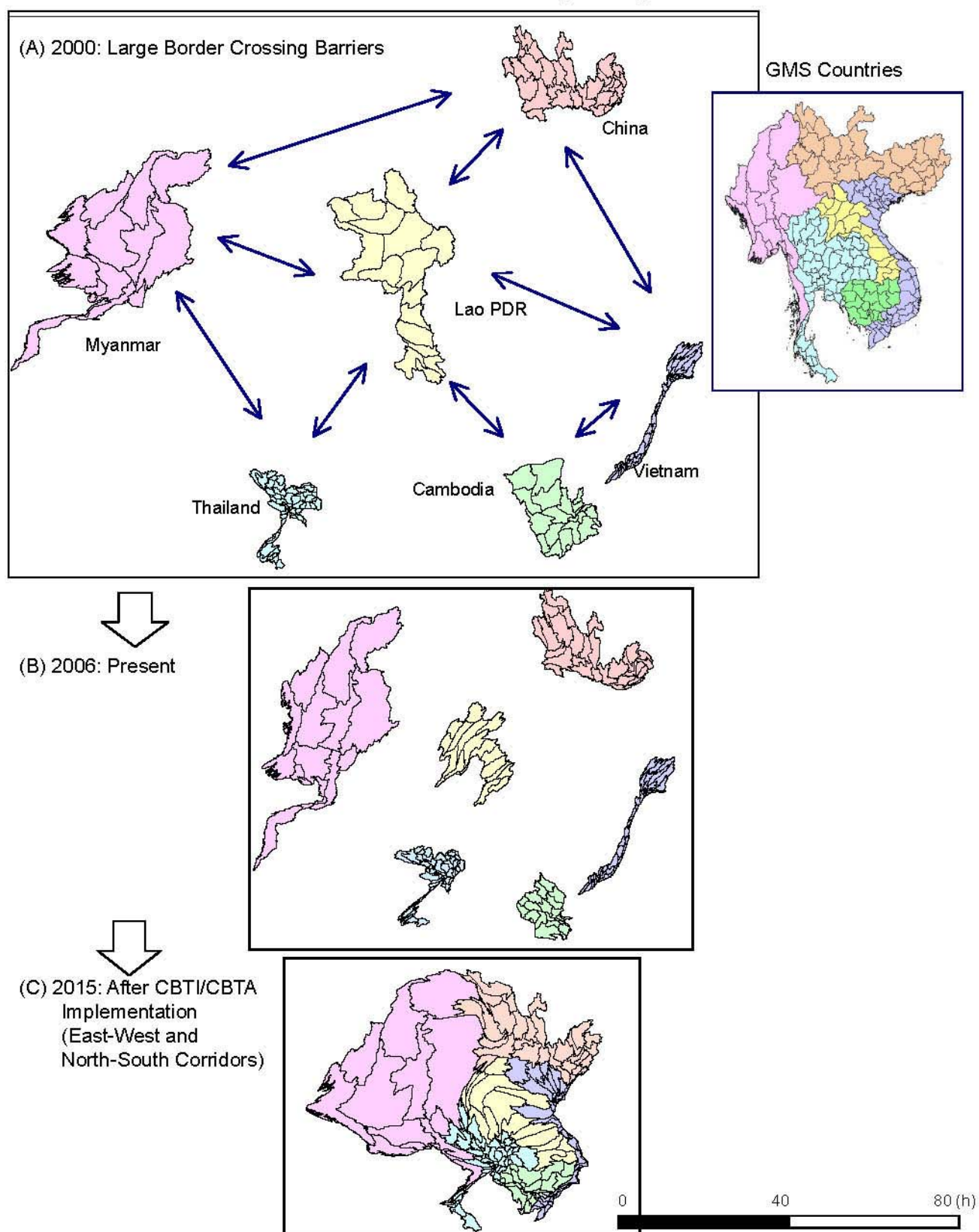
Figure 5.2.2 shows the modal share in the ASEAN countries of container cargo in relation to transporting distance. Trucks carry short-distance container cargo, and railways take over middle and long distance transport. Shipping has its comparative advantage in long distance transport. The relative modal advantages would remain stable even when the time value of transport doubles in the future. Roads (trucks) lose their advantage over shipping in the distance exceeding 750km at present and 1000km in the future, unless a road route possesses an overriding advantage (e.g. peninsular crossing road vs. coastal shipping).

Prior to applying the GMS approach to other regions regarding CBTI / CBTA implementation, it will be necessary to have a rough grasp of modal advantages on major OD pairs of cargo transport.

(3) Competition in Transport Infrastructure

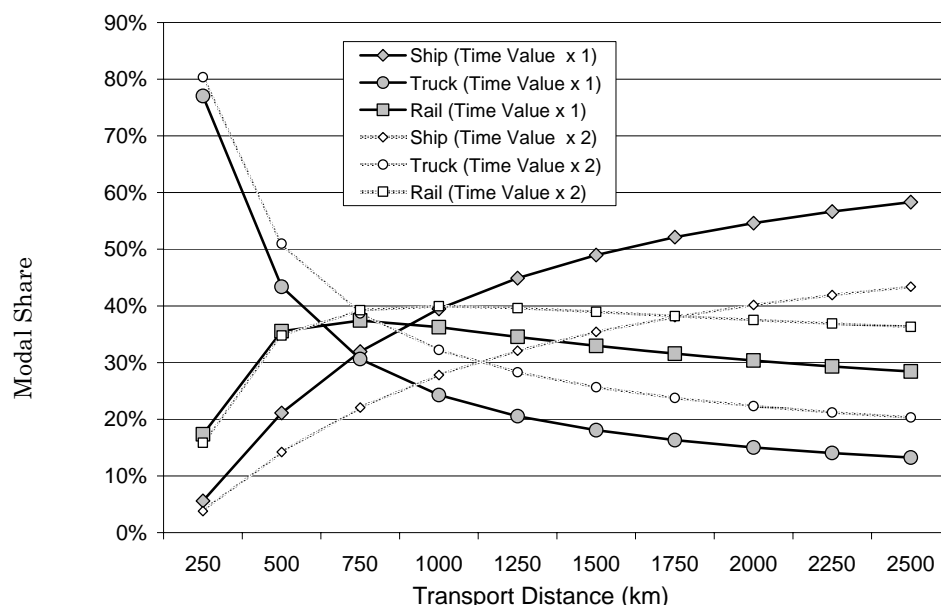
The planning of CBTI development must presuppose the competition not merely between different transport modes but between infrastructural facilities of the same mode. The scope of competition must not be limited to any given country but cover neighboring countries as well. A typical case in the Greater Mekong Subregion is the competition between ports that handle international trade. The export and import of Lao PDR have long depended on the ports in Thailand. Now that the Second Mekong International Bridge was completed and the initial implementation of the CBTA came into force between Lao Bao in Vietnam and Dansavanh in Lao PDR, it is now possible to choose a route of shorter transporting distance connecting to Vietnamese ports such as Danang. As seen in Figure 5.2.3, the cargo handling cost varies widely among the ports. The cost competitiveness of different ports is an important factor to consider in route selection. It will be necessary to understand the present situation and the prospects regarding the competition in transport infrastructure.

Figure 5.2.1 Time-Distance Maps Before and After CBTI/CBTA Implementation in the Greater Mekong Subregion



Source: Prepared by the Regional Planning and Information Laboratory, Tokyo University.

Figure 5.2.2 Modal Share by Range of Transport Distance

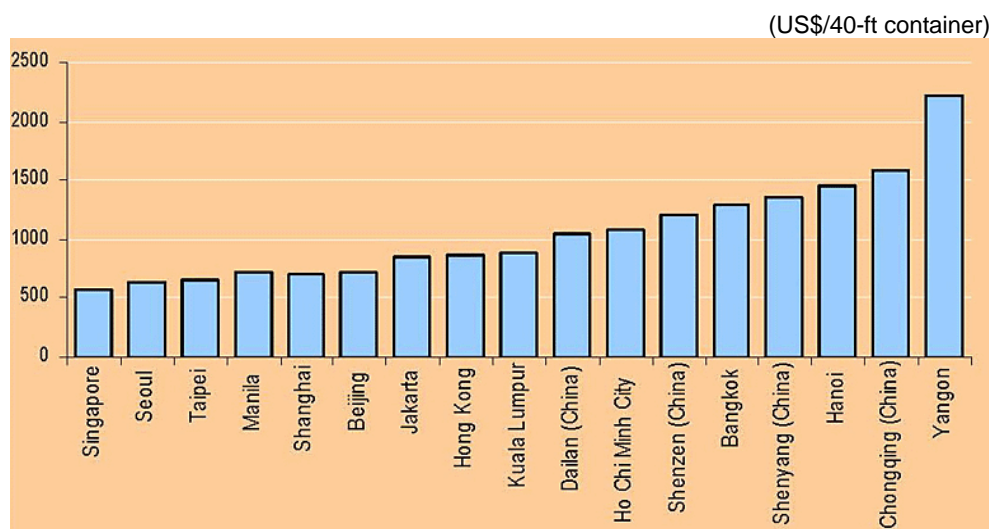


Source: ASEAN, *ASEAN Logistics Development Study*, 2007.

Notes: 1) The graph indicates the modal share in the ideal situation.

2) The time value of 1 indicates the present situation, and the time value of 2 indicates its doubling in the future.

Figure 5.2.3 Cost of Container Transport from Major Ports in Asia to Los Angeles, USA (2003)



Source: ADB, JBIC and WB, *Connecting East Asia: A New Framework for Infrastructure*, 2005.

Note: The cost consists of cargo handling charges at port and the shipping transport fare, but excludes tariffs.

(4) Viability of Economic Corridors

The process of CBTI / CBTA implementation in the Greater Mekong Subregion goes back to the initial stage of rehabilitating war-damaged roads to reinstate the former transport corridors between GMS countries. It has now reached the stage of developing economic corridors, involving the simplification of border procedures and aiming at more effective regional division of labor. To put it differently, the initial stage was intent on the rehabilitation of damaged physical facilities, whereas the present stage of development involves a decisive leap in the philosophy of regionalization by emphasizing the effective integration of physical and institutional infrastructure

development. For instance, the GMS Economic Cooperation Program in 1992 listed up nine major road projects, whereas the Meeting of GMS Economic Ministers in 2000 agreed to integrate them into five economic corridors. Subsequently in 2005, the Meeting proposed nine economic corridors, adding four more (cf. Figure 2.1.2 in Chapter 2).

What does this signify? If and when the countries in a given region are committed to a common political will to see through the process of regionalization and globalization to their shared advantage (and the neutral facilitator-arbitrator is present effectively to provide them with financial and technical aid), the road development initially conceived as separate physical infrastructure projects would almost inevitably lead to their integration into the configuration of economic corridors. Economic corridors are explicitly aimed at the expansion of regional trade and the division of labor in the regional industrial structure.

Naturally, the GMS economic corridors are not without problems. The increase from five to nine corridors poses a serious problem, as the financing requirements are simply too large to develop them all at the same pace. Currently, the east-west and the north-south corridors, which had been proposed early in the initial stage, show a most substantial progress in implementation, followed by the southern corridor. Three corridors form the arteries that link up major cities of the subregion, such as Bangkok of Thailand, Vientiane of Lao PDR, Phnom Penh of Cambodia and Hanoi and Ho Chi Minh of Vietnam, with China. Therefore, they will be given top priority in the future implementation as well. The implementation of the other proposed corridors will have to start much later in line with the growth of hinterlands along their ways. It needs to be pointed out that the proposals for the remaining six corridors were agreed out of political consideration as well as by assessing the development potentials and performances of the member countries. The detailed development programming has not been completed on the four corridors added in 2005.

The primary importance of an economic corridor lies in its multi-sector program approach to development (transport infrastructure and other relevant economic and social sectors) for the purpose of expanding regional trade and promoting inter-country division of labor, with integrated implementation of physical and institutional development projects. This multi-sector approach to physical and institutional development provides a practical model for regional development programs in each GMS country, more specifically in a low income country where international trade has a much larger share in GDP. Moreover, the development program of an economic corridor appeals to private investors by presenting the clear image of government commitment to regionalization / globalization. Similar multi-sector development approaches are being tried in some regions of Africa and elsewhere, but most of them do not appear to have attempted the explicit programming of an economic corridor, i.e. integrating physical and institutional development. This is another reason why the GMS experiences might be useful in other developing regions.

5.3 Review of CBTI/CBTA-related Policies in GMS Countries

1) Objective of Review

The background, conditions, and information needed to promote CBTI/CBTA development have been discussed in the previous sections. Meanwhile, CBTI/CBTA development and its related policies on regional development should be dealt with individually by each country. The viewpoint largely differs on the relative superiority or inferiority of the country in terms of regional economy and other aspects.

In this section, the policy aspects to be taken into account in CBTI development are discussed in relation to the regional characteristics of a country. By doing so, it may be possible to extract some lessons for other countries under similar conditions on implementing projects/programs related to CBTI/CBTA.

2) Priority of CBTI Development and Related Regional Development Strategy

The present study examines the applicability elsewhere of the GMS experiences, notably those pertaining to Thailand, Vietnam, Cambodia and Lao PDR. The key is in finding similar characteristics in other regions. The applicability increases when countries of a given region have characteristics similar to the four GMS countries. However, the GMS-derived criteria for country characterization should not be too rigorously applied, because that would end up eliminating many countries and inordinately constricting the usefulness of the GMS experiences.

Accordingly, countries are characterized in a simple, contrastive way along the following two axes, with allowance for some spontaneity of judgment:

Axis 1: relatively higher income countries (A1) vs. lower income countries (A2) than neighboring countries

Axis 2: coastal countries (B1) vs. inland countries (B2)

The country type of A1B2 (higher income and inland) applies, for example, to Switzerland but is not found among the GMS countries. The characteristics of Vietnam are closer to the A1B1 type (Thailand) than any other type, as evinced in its strong commitment to cross-border transport development and its economic influence over the immediate neighbors. However, the income level is not high enough to be in the same class as Thailand.

The A1B1 type includes, for example, countries like Egypt and Brazil. Roughly speaking, this country type consists of regional leaders of medium income, capable of pursuing the cross-border transport development policy on their own. A considerable number of countries in Africa, Asia, as well Central and South America belong to either the A2B1 type (lower income and coastal) or the A2B2 type (lower income and inland). These two types of countries are the focus of bilateral and multilateral external aid.

Table 5.3.1 summarizes the priorities of CBTI development, salient features of regional development strategy and comparative advantages regarding three country types in the Greater Mekong Subregion. Cambodia and Lao PDR share many similarities, including development strategy. However, the development of seaports in Cambodia is likely to change their relative positioning in favor of Cambodia in the foreseeable future.

Table 5.3.1 Priorities of CBTI Development and Regional Development Strategy for Three Country Types

Type	Example	CBTI Dev't Priority	Related Regional Dev't Strategy	Comparative Advantage	Comparative Disadvantage
A1B1	Thailand	Roads, Ports & Railways	<ul style="list-style-type: none"> Active promotion of CBTA, leadership in ACMECS, and aid to CBTI development in neighboring countries Absorption and utilization of labor from neighboring countries Investment in neighboring countries (resource- and labor-intensive industries) 	<ul style="list-style-type: none"> Accumulated technology Wide industrial base Quality of labor force Market economy from the beginning 	<ul style="list-style-type: none"> Higher labor cost Strong currency Import dependence (fuels, intermediate materials)
A2B1	Cambodia	Roads & Ports	<ul style="list-style-type: none"> Inducement of FDI Emphasis on labor-intensive manufacturing & processing of consumer goods Industrial estate development along coasts and cross-border corridors Promotion of domestic logistics business Capacity development related to cross-border transport and improvement of governance 	<ul style="list-style-type: none"> Lower labor cost Mineral resources (petroleum, natural gas, etc.) Presence of ports 	<ul style="list-style-type: none"> Undeveloped infrastructure Poor governance in some sectors Low purchasing power
A2B2	Lao PDR	Roads	<ul style="list-style-type: none"> Inducement of FDI Emphasis on labor-intensive manufacturing & processing of consumer goods Attraction of FDI to power generation and mining Industrial estate development along cross-border corridors Promotion of domestic logistics business Capacity development related to cross-border transport and improvement of self-governance 	<ul style="list-style-type: none"> Lower labor cost Mineral resources (gold, copper, jewels, etc.) Hydropower resources 	<ul style="list-style-type: none"> Inland country Undeveloped infrastructure Low purchasing power

The following paragraphs give a brief account of each GMS country regarding the priorities of CBTI development and the emphasis of development strategy, including some implications of applicability to other countries of the same type.

3) **Thailand (Higher Income Coastal Country)**

(1) Priorities of CBTI Development

Thailand has been actively pursuing the network development of roads and ports. The country partnered with Malaysia in 1999 to start the landbridge container transport service by railways. The country's transport infrastructure is satisfactorily building up with the ports playing a central role in international trade.

Higher income coastal countries in Africa, Asia, as well as in Middle and South America vary a great deal in their respective levels of available transport infrastructure, which partly reflects their divergent geographical environments. Although it is difficult to generalize about them, the key point of prioritization from Thailand's experience is ports, including container transport linkages among ports, roads, and railways. In particular, it is crucial to study in detail the handling capacity of ports and the conditions of container facilities, as well as the transport network connecting ports with production/consumption centers. If economic/social ties with neighboring

countries are getting stronger, it is also important to understand the current conditions of cross-border roads and railways (standard, capacity, conditions, etc). While Thailand has developed such CBTI, it is necessary to likewise examine whether it has been as thorough in collecting relevant information, including past investment statistics, which may influence CBTI development.

The development of transport infrastructure must include not only the physical aspect but also institutional improvements such as the simplification of customs procedures and the lowering of institutional barriers that inhibit the expansion of international trade and division of labor. It is advisable to identify a country ready to take the initiative in a given region and to check the presence of a neutral facilitator-arbitrator which will provide effective financial and technical support to regionalization efforts. Lower income countries often lack the investment capacities for infrastructure. Thailand is vigorously promoting cross-border transport and extends its technical and financial assistance to neighboring countries, as mentioned also in the following section. It is recommended that higher-income countries should study if such policy sharing exists in the region and if their assistance to neighboring lower income countries is possible.

(2) Regional Development Strategy related to CBTI Development

Promotion of Regionalization

Thailand is a core supporter of regional coordination and collaboration as variously proposed and promoted by such international organizations as ASEAN, GMS, UNESCAP, and the Mekong River Commission. The country has led the way in launching ETI (Emerald Triangle Initiative, joined by Thailand, Lao PDR, and Cambodia) and ACMECS (Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy, joined by Thailand, Myanmar, Lao PDR, and Cambodia) and has contributed decisively to various regionalization efforts. It also provides aid to such lower income neighbors as Myanmar, Lao PDR, and Cambodia for their industrial and infrastructural development. Thailand aids CBTI development in these countries, though primarily motivated to meet the needs of its own private investors. The country's project aid is often provided in close association with ADB- and World Bank-financed projects. When CBTI development is proposed in other regions, the presence of an organization that leads such regionalization effort is crucial. Such an organization already exists for most regions in Africa, Central/South America and Asia. Thus, the true issue is whether or not that organization functions effectively. If not, the underlying reason should be known.

It cannot be denied that Thailand's active involvement in regionalization efforts has been primarily to serve its own economic ends, satisfying the needs for accessing cheaper labor, mineral resources, and electricity that are available in neighboring countries. However, it is equally undeniable that such action on the part of Thailand has also brought sizable benefits of increased employment and income to its neighboring countries. It must be understood that the more or less favorable intercountry relationships evolving in the Greater Mekong Subregion will not necessarily emerge in other regions as well. Societal destabilization caused by civil wars, religious confrontations, or conflicts of long historical standing with neighboring

countries is likely to keep down cross-border transport to a low level, while difficult border terrains simply inhibit any infrastructure development in some places. If the level of cross-border transport remains low, it is advisable to investigate into the reasons and possible countermeasures that may eliminate the problems.

Economic Development and Investment Strategy

Thailand's strategy for CBTI-related economic development and investment promotion is closely linked to the country's stance on regionalization as mentioned above. The strategy is basically reactive to what is going on in the private sector and therefore designed to back up the private sector activities. For example, labor supply of neighboring countries is largely absorbed by the horizontal division of labor in textile and apparel industries and by the vertical specialization in parts manufacturing industries. Thai investment is directed to those areas where the domestic supply is inadequate, such as hydropower generation and copper and gold mining in Lao PDR.

This strategy of economic development and investment is probably applicable to most higher income coastal countries in Africa, Asia, as well as in Middle and South America. As will be described in relation to Cambodia and Lao PDR, however, the strategy is liable to expand the informal sector which is not necessarily favorable. It will thus be necessary to formulate and implement programs that counteract the negative outcomes, such as illegal drug smuggling, slave trade, and transmission of infectious diseases. In addition, there are fundamental questions that must be answered, such as whether such development is welcome by neighboring countries, whether there is enough labor of a certain level in the neighboring countries, and whether there are interested investors. In the case of Thailand, these conditions were readily satisfied after peace was achieved in the early 1990s and following the institutional development of a policy sharing framework.

4) Cambodia (Lower Income Coastal Country) and Lao PDR (Lower Income Inland Country)

(1) Priorities of CBTI Development

Cambodia is a coastal country and possesses the advantage in bulk transport through maritime shipping. Cambodia far outdistances Lao PDR by this advantage. Cambodia should have been able to exploit the advantage to the full, but the civil wars in the past did not allow any significant development of transport infrastructure. The situation has hardly improved since the restoration of peace. The country now faces a daunting array of transport infrastructure projects to implement, namely the port development in Sihanoukville, road construction and improvement including a new bridge across the Mekong River, and construction of the railway section between Phnom Penh and Ho Chi Minh which is the major missing link of the railways connecting China and Singapore, to mention a few. Although the problems related to infrastructure are being solved quickly, the infrastructure level remains low.

Lao PDR is an inland country, seriously handicapped in bulk transport by the absence of easily accessible port facilities. Hence, the country relies on ports in Thailand and Vietnam, but international trade is at a disadvantage due to higher cost and longer distance of road transport. On the other hand, Lao PDR has its advantages. It is: i) in a strategic location in the center of the Indochina Peninsula with land transport

connections to China, Vietnam, Cambodia, Thailand, and Myanmar, and ii) has rich natural resources particularly hydropower and minerals including gold and copper. Foreign investments have already poured in from a number of countries including Thailand and Vietnam. Lao PDR can be the largest beneficiary of CBTI/CBTA development.

Cambodia and Lao PDR are both low income countries, although they differ from each other in many respects including natural conditions. Their economic superiority over other countries is too few to mention except for their cheap labor and some natural resources. The volume of their international trade is small in quantity despite the high proportion to their respective GDPs. Therefore, CBTI/CBTA development is strategically important for national development. It can be one of the common key strategies that can be pursued by the countries in the region to link the international road network and the core logistics facilities, such as ports, with the production /consumption centers in the region.

There are many similarly handicapped lower income countries in Africa, Asia, as well as in Middle and South America. A coastal country requires an efficient port as long as it wants to pursue industrial development. An inland country might be able in the long run to specialize in parts manufacturing of relatively high value-added contents. If a country plans to extend development activities and their benefits all over its territory, CBTI development would function as the fulcrum for turning industrial and other investments toward frontier regions.

The development of transport infrastructure must include not only physical facilities but institutional improvements such as simplification of customs procedures and lowering of institutional barriers that inhibit the expansion of international trade and division of labor. It is advisable to check the existence of a neutral facilitator-arbitrator that provides effective financial and technical support to regionalization efforts, as well as the institutional framework for policy sharing among the countries in the region.

(2) Aspects of CBTI Development

Economic Development and Investment Strategy

Cambodia is one of the poorest countries in the world, hard-pressed by the extreme shortage of capital and technology. The export of textile products has been increasing in recent years, partly because Thai industrialists invested in the country to take advantage of cheaper labor supply. Cambodia arguably has favorable potentials in labor intensive industries like agricultural processing and parts manufacturing, and in fact several industrial estates are being planned or proposed in various parts of the territory. However, infrastructural and institutional constraints and trained manpower shortage are too serious to move these estates from the drawing board to actual sites.

Lao PDR is another of the poorest countries in the world, seriously challenged by the extreme scarcity of capital and technology. The investment in hydropower generation has increased sizably in recent years, with capital and technology supplied mainly by Thailand and to a much lesser extent by Vietnam. The investment from the neighboring countries is on the increase in mining, notably gold and copper. In conventional terminology, Lao PDR is described as having favorable potentials in labor intensive industries like agro-processing and parts manufacturing, and industrial

estates are being planned in Vientiane and elsewhere. With domestic capital in short supply, estate development has been extremely slow, constrained by the extreme inadequacy of infrastructure, institutional capacity, and manpower capability.

The promotion of labor-intensive industries is the development strategy commonly sought by those countries endowed with large populations but no sizable natural resources. For example, Cambodia has a limited industrial base, with only textile industries showing signs of sound growth. The export picked up by the growth of textile industries accounted for nearly 60% of the country's GDP (2004, according to the WTO). The fact argues for the success of the development strategy. When a CBTI/CBTA-related project is proposed in lower income countries, the quantity and quality of labor are two of the key issues that must be addressed together with the legal/institutional system that would be conducive to investment. Investment is crucial to regional development. The present study concludes elsewhere that the promotion of labor-intensive industries can be done by a comparatively small investment that will bring about a comparatively large economic impact, and that this economic impact will benefit a wider area when combined with CBTI / CBTA implementation (cf. Section 6.5).

Capability Development and Improved Governance

CBTA implementation in Cambodia and Lao PDR has been launched to serve as the pilot case for the subregion. However, details of implementation have not been entirely in accord with the initial stipulation, and some parts have been arbitrarily changed. The major reason appears to be the inadequate training among the government personnel in charge and the poor understanding of the details of the CBTA and other related rules of conduct. Moreover, there has been a strong resistance among those people with vested interests in the traditional customs procedures (notably, tariff collection). To turn the situation around, the ADB and other international organizations have introduced several training programs for the relevant government personnel. Because Cambodia has few domestic truckers and forwarders competitive enough in cross-border transport, it is feared that the economic benefits of CBTI / CBTA implementation will be mostly snatched up by forwarders and truckers of Thailand and elsewhere.

The issue of governance or social capability is probably common to every low income country in the world, so is the issue of human resource development. To build up the social capability of these countries and raise the capability of individuals step by step, it is necessary to institute and continue various programs on education, skills training, and information dissemination in cooperation with multilateral and bilateral donors. Not only government officials but also transporters and forwarders in the private sector should be included in this initiative. In addition, it should be noted in the planning stage that the resistance to CBTA from those who have vested interests reportedly becomes strong when customs revenue shares a high percentage in the total revenue.

Box 5.3.1 Present Conditions of Cross-border Transport in Africa

There are many inland countries in Africa that depend on land transport for logistics and trade in the absence of ports. Thus a number of international corridors with numerous border gates exist. Trucks often queue even on the roads outside the parking space of the border facility. According to the World Bank, it sometimes takes 3-7 days to pass the border, even reaching two (2) weeks in extreme cases. Under these circumstances, road development cannot foresee any effect by itself and development goals will never be attained. The effort to improve cross-border transport has steadily been pursued for more than a decade, and, as an output of the effort, the implementation of the One Stop Border Post (OSBP) will start soon. The OSBP intends to shorten the cross-border process by allowing both countries to conduct joint procedure/ inspection. This may be compared with the conventional two-time procedures of exit and entrance. The OSBP is expected to be the breakthrough for improving cross-border transport.

JICA is currently supporting the OSBP project in Chirundu (Zambia/Zimbabwe border) which is located on the North-South Corridor, one of the arteries in southern Africa. The assistance covers mainly institutional development necessary for implementing OSBP (domestic laws and bilateral agreements) and training border officials including the preparation of OSBP manuals. More than 10 agencies/organizations are involved in border management. Hence, it is a time-consuming work to coordinate among domestic agencies/organizations and between both countries. As to other aspects outside JICA's direct assistance, such as computerization and localization of procedures/documents and management of the domestic OSBP committee, cooperation with other donors is in progress. In addition, Japan's ODA extends also to the "hardware" component for the Chirundu border; the bridge over the Zambezi and border facilities on the Zambian side. In this first OSBP project in Africa, Japan's ODA plays a major role.*

As to OSBP, not only economic benefits but the prevention of HIV/AIDS spread is expected. This is because the international corridors in Africa serve as the route of HIV/AIDS spread due largely to the truck drivers waiting at the borders for a long time. The OSBP is thus regarded as one of the effective countermeasures.

* Scheduled to be the first full-scale OSBP in Africa.

Control of Negative Impacts

Cambodia and Lao PDR are located between the two influential countries of Thailand and Vietnam. The expected increase in border crossing traffic as triggered by the CBTI / CBTA implementation would be mostly transit cargo, with fewer benefits coming to these two countries. It is also likely that these countries will have more than their fair share of negative impacts, namely (i) widening disparity with neighboring countries, (ii) transmission of infectious diseases, (iii) slave trade and illegal drug smuggling, and (iv) deterioration of traffic safety. These fears are not unjustified. Indeed, reports have already been made on the extent of the negative impacts (ii) and (iii) in Cambodia and Lao PDR. International organizations and NGOs have started various programs to counteract or contain some of these problems, and their activities are bringing in some favorable results.

The negative impacts from cross-border transport must be the frequent topic of heated discussions regarding low income countries anywhere in the world. The present study examined a few cases of ongoing activities against AIDS/HIV transmission, slave trade, and drug smuggling. The study also demonstrated the importance and the effectiveness of the ongoing CBTI / CBTA implementation in reducing regional disparities, as described in Chapter 6. The following points may be considered for lower income countries in Africa, Central/South America, and Asia:

- A. The development of CBTI/CBTA tends to favor lower income countries/areas.
- B. Cooperation with NGOs/NPOs is effective in alleviating the negative impacts of easier cross-border flow, including AIDS/HIV transmission and human trafficking.
- C. There should be an institutional framework to monitor and intervene, when necessary, in the informal sector to prevent AIDS/HIV transmission, human trafficking, and drug smuggling.
- D. Traffic safety measures in relation to cross-border transport in Cambodia and Lao PDR can be dealt with in a CBTA item which covers road standards, vehicle dimensions, insurance/guarantee outside the country, etc.

5.4 Comparative Case Study of Two Inland Countries: Lao PDR and Mongolia

Two lower income inland countries in Asia, Lao PDR and Mongolia, are compared to test the applicability of the basic conditions and other issues discussed in the previous sections.

1) Present Economic and Industrial Conditions

The population of Mongolia is about half of Lao PDR's, but the population in its national capital, Ulaanbaatar, is almost the same as Vientiane's. Animal husbandry has been the mainstay of the Mongolian economy. However, many smaller herders were driven to abandon animal husbandry by the economic confusion caused by the open market policy and two heavy snowfalls. These resulted in the excessive concentration of population in Ulaanbaatar. Per capita GDP in the two countries is about equivalent, but the export of Mongolia is nearly twice as large as that of Lao PDR. Major trading partners for Mongolia and Lao PDR are economically more advanced countries.

Table 5.4.1 General Comparison of Mongolia and Lao PDR

	Mongolia	Lao PDR
1. Land Area ¹⁾	1,564,100km ² (four times larger than Japan)	240,000km ² (72% of Japan)
2. Population ¹⁾	2,594,100(Dec. 2006)	5,609,000 ³⁾
3. National Capital ¹⁾	Ulaanbaatar Pop. 965,300 ³⁾	Vientiane Pop. 730,000 (estimate of the metropolitan area)
4. Ethnic Composition ¹⁾	Mongols (95%) Kazakhs and others	Lowland Laos (60%) and others, totaling 49 ethnic groups
Economic Conditions		
1. Major Industries ¹⁾	Mining, animal husbandry and light industries	Agriculture, industries, forestry, mining and hydro-power generation
2. GDP (at Current cost) ²⁾	3,172billion Tugriks 2.689billion US\$	30,330 billion Kips ³⁾ 2.847billion US\$ ³⁾
3. Per Capita GDP ²⁾	1,043 US\$	511 US\$ ³⁾
4. Economic Growth ²⁾	8.4%	7.3% ³⁾
5. Inflation ²⁾	6.0%	7.2% ³⁾
6. Unemployment ²⁾	3.2%	5.1% ³⁾
7. Total Trade ²⁾	3,028 million US\$	1,942 million US\$
(1) Export	1,543 million US\$	882 million US\$
(2) Import	1,485 million US\$	1,060 million US\$
8. Major Trade Items¹⁾		
(1) Export	Minerals (copper concentrate, Molybdenum concentrate, fluorite), Livestock products (leather, wool, cashmere)	Apparels, gold & ores, electricity, timber products
(2) Import	Petroleum products, automobiles, machinery & equipment, sundry goods, medical supplies	Fuels, manufactures, apparel materials
9. Major Trading Partners²⁾		
(1) Export	China, USA, UK, Canada, Korea	Thailand, Vietnam, China, Malaysia
(2) Import	Russia, China, Japan, Germany, Korea	Thailand, China, Vietnam, Singapore

Source: 1) Ministry of Foreign Affairs Home Page, 2) ADB, Key Indicators, 2007

Note: 3) as of 2005

2) Border Crossing Points in Mongolia and CBTI Development

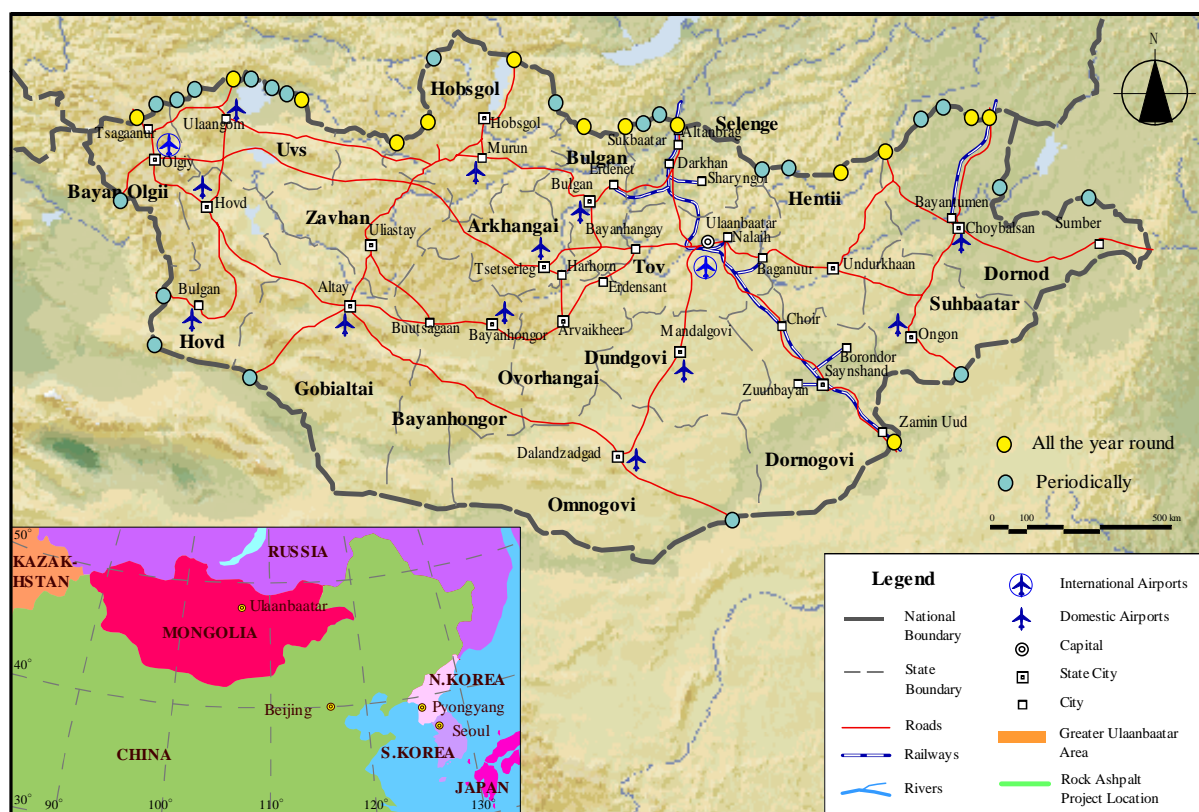
As shown in Figure 5.4.1, 30 border crossing points dot the Russian border and 14 of them are open year-round. There are 11 crossing points along the Chinese border, of which two are open year-round.

International transport, excluding air travel, uses roads and railways in Mongolia. There are two border crossing railways, the south-north railway that passes Ulaanbaatar midway and the Bayantumen railway, a branch line of the Russian Trans-Manchurian Railway that

comes down from the north to Choybalsan, a major city in the eastern part of the country. The Asian Highway No. 3 runs along the south-north railway. The ADB-financed construction of the highway began from the Russian end and will take a few more years to reach the Chinese border.

Container cargo transport from Tokyo to Ulaanbaatar takes either one of the two railway routes, the southern route through China and the northern route through Russia. The southern route (railway gauges of 1,435 and 1,520mm) has a distance of 1,400km from Tianjin to Ulaanbaatar. It takes two weeks to transport cargo at a cost of US\$680/TEU. The northern route (gauge of 1,520mm) has a total distance of 2,000km from Vladivostok and Nahodka to Ulaanbaatar, and it takes three months to transport cargo at the cost of about US\$1,800/TEU. The northern route used to be the major route for international transport until the early half of the 1990s. The volume of freight on the route continued to shrink since then. The route is now hardly used because of the deteriorated service level like reduced service frequency and irregular schedule¹²⁾.

Figure 5.4.1 Border Crossing Points in Mongolia

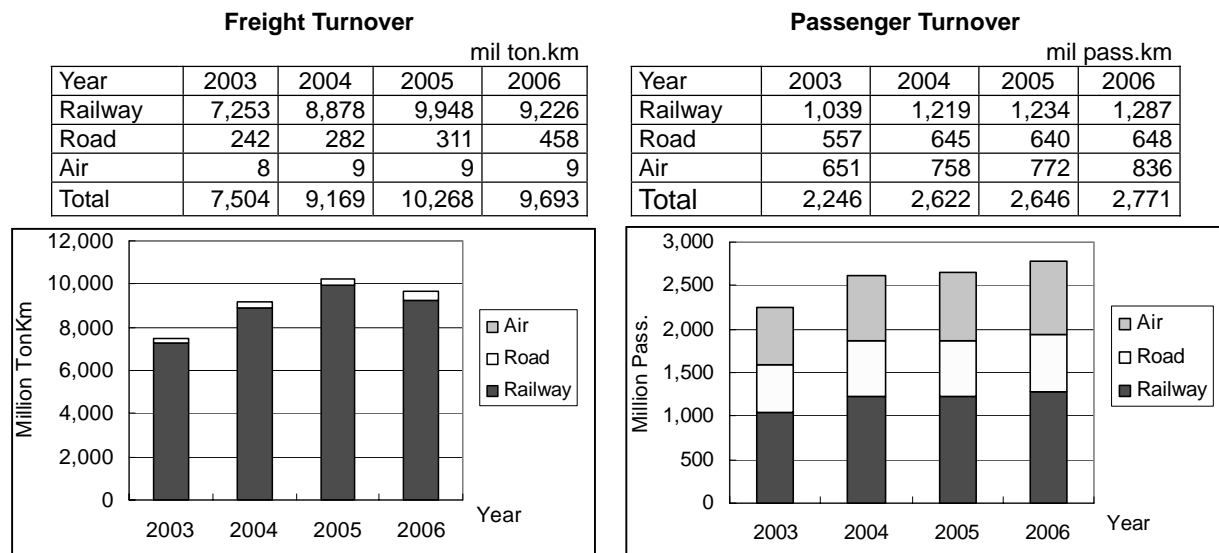


¹²⁾ The improvement of the Russian Trans-Manchurian Railways is now underway. In the meantime, the container cargo for Ulaanbaatar is sent via Tianjin on the southern route.

3) Present International Freight Traffic

Major industries and the bulk of the population are located along the south-north railway. Therefore, the traffic of freight and passengers, both domestic and international, relies heavily on railways, as shown in Figure 5.4.2.

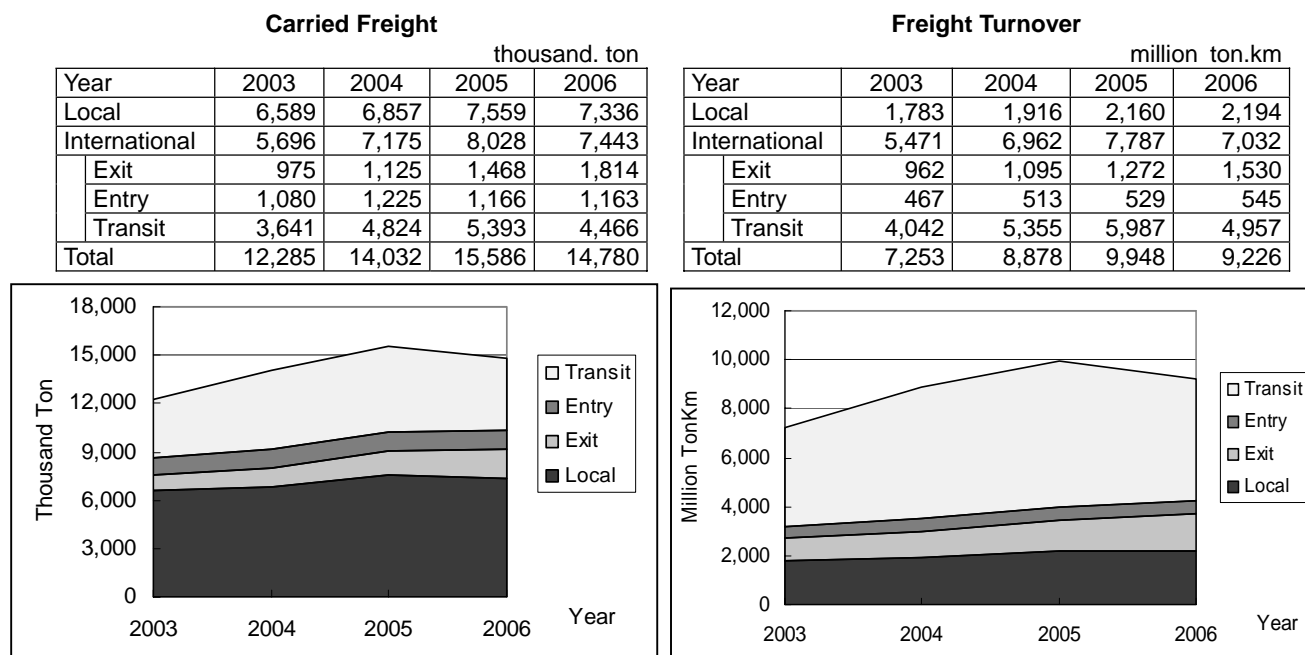
Figure 5.4.2 Freight and Passenger Traffic by Mode in Mongolia



Source: Mongolia Statistical Yearbook 2006.

Mongolia borders with Russia and China, both politically experienced and economically advanced countries of huge scale. As indicated in Figure 5.4.3, transit cargo between the two neighbors accounts for a large part of the international freight.

Figure 5.4.3 Railway Freight Transport in Mongolia

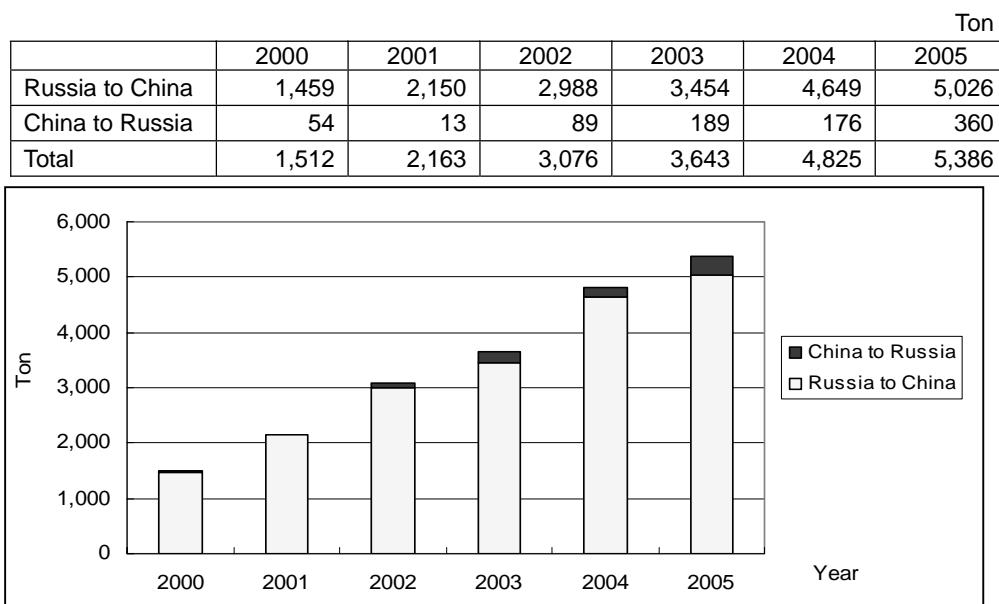


Source: Mongolia Statistical Yearbook 2006.

Note: Transit cargo dropped in 2006 because the export of petroleum products from Russia to China and Mongolia was cut down due to the faltering business of UCOS, a major petroleum company.

As shown in Figure 5.4.4, the bulk of transit cargo in Mongolia constitutes export from Russia to China.

Figure 5.4.4 Breakdown of Transit Cargo



Source: Ulaanbaatar Railway Co.

The Mongolian Railways Co. was jointly established by Mongolia and Russia with equal an investment share of 50%. Therefore, there is no reason for Mongolia to be dismayed by transit cargo passing through. There are little institutional barriers at the crossing point on the Russian border. At the crossing point at Zamin Uud on the Chinese border, there are some barriers. Firstly, the railway gauge is different between Mongolia (1,520mm) and China (1,435mm), requiring the transshipment of transit cargo from one railway to the other. Secondly, the transshipment at Zamin Uud is now nearing the capacity. Thirdly, the locomotives of Mongolia are too superannuated to last any longer. Fourthly, the railway on the Chinese side is limited in its transport capacity. These factors add up to increase the cross-border barrier between Mongolia and China. In addition, the barrier rises at the politically high-handed attitude expressed by China at the border.

Given these circumstances, Mongolia is now studying the possibility of restoring the northern route as a viable alternative, thereby reducing the almost total dependence on the southern Chinese route.

The national freight company TUU-SHIN was established in 1990 with financing from UNCTAD/ESCAP to handle container cargo. The company transports mainly imported goods, like food products and construction materials, from China. This specialization is related to the fact that the railways mostly carry bulk cargo, such as petroleum products (31%) and timber (24%) from Russia and copper concentrates (8%) and fluorite (2%) for export. The Government of Mongolia hopes to raise transport efficiency in the future by introducing the system of multimodal logistics to handle both export and import products.

4) Future Direction of Development in Mongolia

Foreign direct investment in Mongolia has been attracted to the development of underground resources, and the international transport network has been servicing the

export of mined products. Large-scale mining projects are about to begin in the southern part of Gobi and the eastern region, and the improvement of railways is now proposed to export the outputs from these development projects.

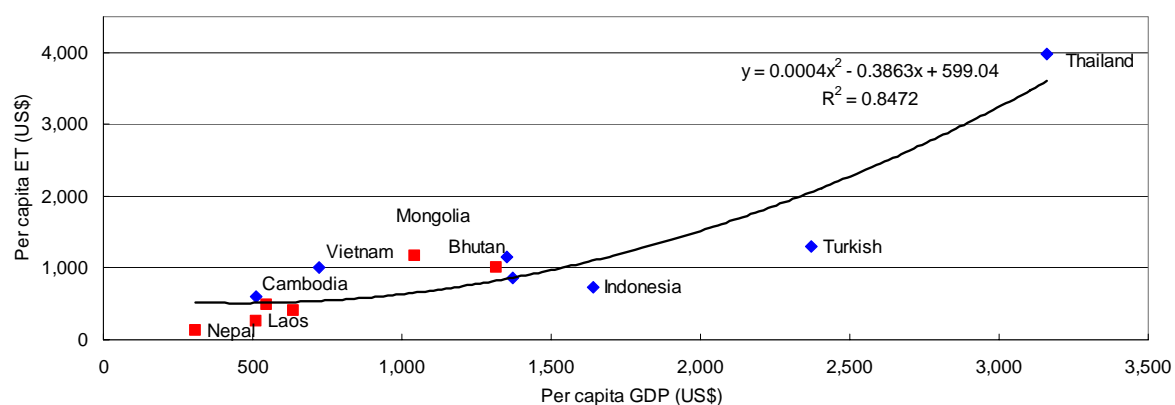
The Russian Trans-Manchurian Railways has been taking various measures to restore the regular scheduled services and expand the transport capacity. As the Russian Railways succeeds in recovering user trust, the Bayatumen railway as its branch line will be able to play its due role in international transport, contributing to the development of Northeastern Asia.

Mongolia has potentials in animal husbandry, thermal power generation by coal, and processing of mineral resources. The country needs to formulate the strategy for regional development, specifically to integrate industrial promotion with transport infrastructure development. Railways will continue to shape the future structure of the international transport network and regional industrial activities.

5) Development Issues Shared by Mongolia and Lao PDR

As shown in Figure 5.4.5, the total volume of external trade generally increases as GDP per capita increases regardless of the geographical conditions of the country, i.e. inland, coastal, or island countries. This shows that economic growth enhances trade, which puts greater urgency on CBTI and CBTA development.

Figure 5.4.5 Relationship of GDP Per Capita and External Trade Per Capita



Inland Country

	Mongolia	Bhutan	Nepal	Lao PDR	Kyrgyz	Uzbekistan
Population (million)	2.6	0.6	25.9	5.6	5.2	26.7
GDP (million US\$)	2,689	799	7,668	2,847	2,473	15,453
Per capita GDP (US\$)	1,043	1,318	310	511	545	637
ET ¹⁾ (million US\$)	3,028	644	3,248	1,435	2,512	10,786
Per capita ET (US\$)	1,167	1,015	125	255	486	404
ET/GDP	1.13	0.81	0.42	0.50	1.02	0.70

Coastal Country/ Island Country

	Sri Lanka	Cambodia	Vietnam	Indonesia	Thailand	Philippines	Turkey
Population (million)	19.89	14.16	84.16	222.05	65.23	86.97	6.59
GDP (million US\$)	23,906	6,898	60,884	364,459	206,247	117,562	15634.27
Per capita GDP (US\$)	1,370	513	723	1,641	3,162	1,352	2371.59
ET ¹⁾ (million US\$)	17,160	8,427	84,717	161,768	259,176	100,706	8576.00
Per capita ET (US\$)	863	595	1,007	729	3,973	1,158	1300.91
ET/GDP	0.72	1.22	1.39	0.44	1.26	0.86	0.55

Source: ADB, Key Indicators, 2007.

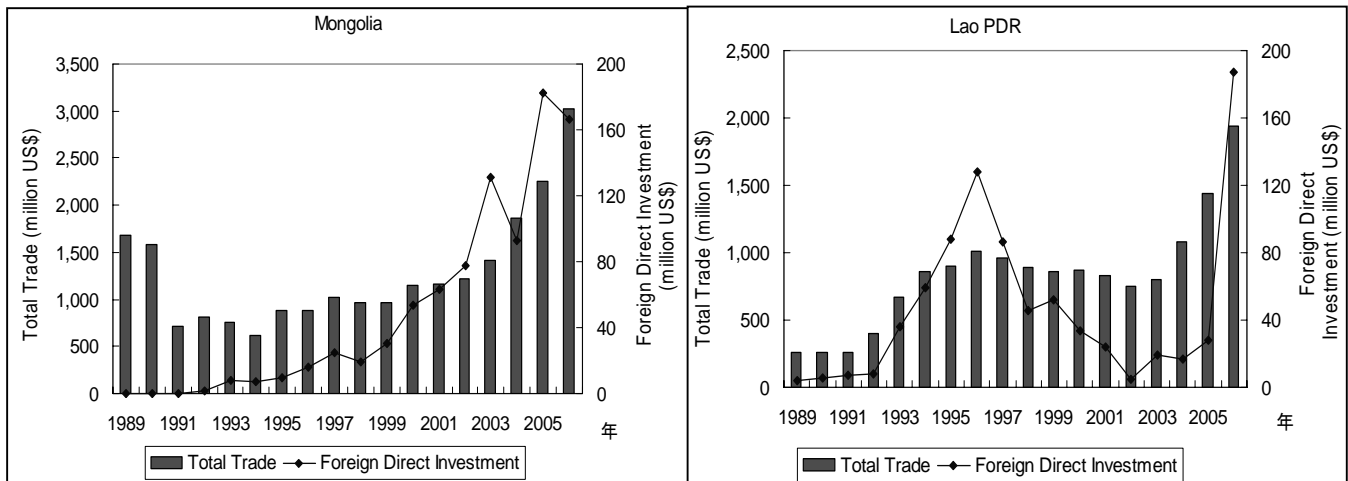
1) ET refers to external trade.

Both Mongolia and Lao PDR are inland Asian countries. Inland countries are commonly considered to be under unfavorable economic conditions compared to coastal and island countries. It is partly because coastal resources, such as fisheries, are not available to inland countries. What is more critical is the difficult access to port facilities, which play a major role in external trade. Both Mongolia and Lao PDR have their own development strategies to overcome such disadvantage.

Mongolia and Lao PDR have common characteristics, three of which are described as follows: first, almost 20 years have passed since both countries moved toward a market economy around 1990 following perestroika, or the restructuring of the Soviet economy; second, they have a monoculture economy¹³⁾ which depends on natural resources; and third, development is mainly concentrated in special economic zones near the borders and along international economic corridors.

Both Mongolia and Lao PDR have achieved economic growth along with the transition to market economy and regionalization in Asia. The total amount of their trade and direct investments increased as shown in Figure 5.4.6.

Figure 5.4.6 Total Trade and Direct Investment in Mongolia and Lao PDR



Source: ADB, Key Indicators, 2007

These two countries have adopted policies to reduce regulations and thus attract foreign direct investments in exploring their respective rich underground mineral resources¹⁴⁾, which have been undeveloped up to now. In order to overcome the handicap of inland countries, i.e. higher transport cost to port facilities, they have promoted industries that can absorb transport development costs. Mongolia, where investments have been poured into mineral resource development¹⁵⁾, has utilized its predominant transit cargo transportation routes and has improved the transport efficiency of its domestic routes. On the other hand,

¹³ In Mongolia, the share of mineral resources in its total 2006 export reached 58%. In Lao PDR, 37% of its total export is covered by garment, electricity, and timber products.

¹⁴ In Lao PDR, several mineral deposits have been discovered. They include extensive beds of rock salt, which can be used as fertilizer material, and more than 10 billion tons of tin deposit. Deposits of antimony, sulfur, gold, tungsten, iron, copper, lead, magnesium, and manganese, have also been discovered. In Mongolia, major natural resources include molybdenum with one of the largest deposits in the world, as well as gold, copper, and uranium.

¹⁵ The most popular sector for foreign direct investment is research and study of geology, followed by trade and logistics. In 2005, the FDI in these two sectors accounted for 48% and 16% of total accumulated amount of FDI during the period 1990-2000.

in Lao PDR, power development has been promoted to utilize its rich water resources and to export them to Thailand, without incurring huge transport costs. Both countries have put emphasis on the development of their respective tourism industries.

6) Comparison of Mongolia and Lao PDR

In general, inland countries need to overcome several disadvantages to facilitate economic growth. In the absence of seaport facilities, they have to transit through other countries' territory for their external trade. The experiences of inland countries who have succeeded in overcoming such constraints and have achieved economic growth can serve as lessons for other countries facing similar conditions.

Along this line, Mongolia and Lao PDR have taken several common strategies. They have placed importance on the crossing points of international transport routes by formulating economic corridors to optimize them. They have likewise developed international logistics routes and promoted regulatory reforms in order to attract foreign direct investment. Moreover, they have promoted investments in natural resource development, which can easily absorb transport costs, and tourism development, where border crossing barriers do not pose serious deterrents.

At present, Mongolia faces several constraints, including the decrease of transport capacity along its core transport corridor, the north-south railway, due to the deteriorated rolling stocks and the lack of capacity of transport infrastructure such as railway and road at southern cross-border points with China. In this context, Mongolia can learn from the experiences of Lao PDR in CBTI development: Mongolia's CBTI development program, which has been promoted with the financial assistance of the ADB, China, and the US, should consider the regionalization of northeast Asia.. At present, there is no international arrangement to facilitate border-crossing procedures at either the northern or the southern cross-border points. GMS-CBTA implementation in Lao PDR can be also a good practice for Mongolia.

On the other hand, Lao PDR can learn from the experiences of Mongolia in improving transit cargo efficiency. Mongolia has enhanced its transit cargo transport, improved its efficiency, and developed regional economic corridors, thereby increasing the potential of natural resource development along such corridors.

6. Strategic Cross-border Transport Planning Models

6.1 Purpose of this Chapter

This chapter deals with the strategic cross-border transport planning models used in the planning and the evaluation of infrastructure and regional development projects in relation to cross-border transport. Although the following discussion topics relate to other chapters in this report, it is prepared as an independent chapter, since it is an analytical tool and its result is still hypothetical due to insufficient data and preliminary assumptions made. In sections 6.2 and 6.3, existing models are reviewed, and directions for model construction are determined. In Section 6.4, the database created by this study is described. Section 6.5 discusses the data and information that should be collected. Section 6.6 presents the possible impact of the CBTI/CBTA and the FDI on the regional economy, although preliminarily. The results of this trial analysis are described in chapters 3 to 5, albeit qualitatively due to insufficient data.

6.2 Review of Existing Models

- 1) Development Direction of Strategic Cross-border Transport Planning Model – from Research to Practice

With a constrained budget for Japanese ODA, JICA is requested to improve affectivity and efficiency in its operation. Hence, in CBTI development, it is imperative to clearly show project/program effectiveness by planning and evaluating projects from various viewpoints, taking account of existing conditions, effectiveness, efficiency, and sustainability.

While CBTI development in the GMS is mostly led by the initiatives of the ADB, project planning and evaluation are mostly qualitative, and quantitative analyses are not necessarily applied. This is due to the limited availability of data, low integrity of available data, as well as the vast time and resources required to obtain reliable data.

Moreover, for a project such as CBTI development which casts a wide influence over several countries or regions, the evaluation tends to remain qualitative due to the absence of uniform information. Although quantitative analyses are already popular in the usual transport sector projects (e.g. in the form of running time and operating cost reduction), the methodology can only be applied in CBTI research projects in the Greater Mekong Subregion.

The development of a suitable model that should respond to the needs of planning and evaluation of CBTI projects/programs by overcoming the difficulties of data deficiency is thus long-awaited. .

2) Existing Strategic Cross-border Transport Planning Models

(1) Transport Model and Regional Economy Model

The strategic cross-border transport planning model has two submodels, namely: (i) transport model which estimates traffic demand, and (ii) regional economy model which measures the influence of CBTI/CBTA improvement on the regional economy. The former assesses the possible changes in traffic due to CBTI/CBTA development, and the latter evaluates the growth of the regional economy using the outputs of the former. The current status of these existing models is described below

In the transport model in economics, the trend-type model has conventionally been used. Recently, however, the stochastic choice model expressed in logit or gravity equation, which is usually used in transport engineering, has become the mainstream after its suitability has been recognized in microeconomics. For instance, various variables, such as distance, travel time, population, and several industrial indicators, are now used in the gravity model as interzonal impedance, which can estimate the volume of interzonal passenger and goods flow.

Meanwhile, the existing regional economy model can be further divided into interregional industrial input-output model and spatial computable general equilibrium model (SCGE Model). These models both require transport cost as their basic input which can be obtained using the transport model.

The interregional industrial input-output model requires an input-output table showing the interdependency among industrial sectors. This model assumes the existence of input-output tables for the region or accurate industrial database from which the input-output tables can be created.

The SCGE (or CGE) model assumes a balanced supply-demand relation in the market economy composed of mutually dependent general goods, services, and production elements such as capital and labor. Particularly, a model applicable to a wide area covering several countries is constructed in order to analyze spatial issues such as interregional trade and income gaps. Most of the current SCGE models not only express interdependency by mathematical equations but introduce a number of economic indicators including the input-output table. Some models constructed to deal with international trade assume imperfect competition after alleviating the assumption of perfect competition (market price = marginal cost). Moreover, there are researches on nonequilibrium models assuming a nonbalanced ever-changing market economy (dynamic model, model considering monetary market, etc). In this case, however, a mathematical interpretation of the results become very complex in spatial economics theory, and the database should be prepared in a time series while the SCGE model can be constructed on single-year data.

(2) Outline of Existing Models

There are few existing models that can deal with CBTI development. Some examples are shown in Table 6.2.1. They measure explicitly the impacts of CBTI development in the Greater Mekong Subregion. All of these can be considered as deserving of an examination in this study. In particular, with respect to the ADB model, the transport network (excluding air) in the Greater Mekong Subregion and OD tables of both

passengers and goods for eight (8) different modes are included in the database based on a provincial zoning. While this will be useful for future studies, the model needs to be refined in order to simulate the route choice due to CBTI development, since OD information on trade volumes by shipping is still unavailable (all OD points are represented by individual ports).

Table 6.2.1 Selected Existing Models for GMS Cross-border Transport

Model	Outline
ITT Model: Trans-Asia Transport Issues and Policy Analysis (Ieda, Fujino, Yoshida, Abe, Shibasaki, and Ma; ADBI Annual Conference, 2006)	This model forecasted container traffic on road, railroad, and sea transport in the GMS and China. It considered users' choice of transport mode. The estimated case indicates that container load, transported by sea, would change to inland transport due to the development of the Asian Highway.
ADB Model: GMS Transport Sector Strategy Study (PADECO, ADB, 2005)	Network is constructed for eight (8) transport modes in the GMS and based on the survey data of past studies. OD tables were prepared for passengers and goods. Then using JICA STRADA traffic assignment was conducted to quantify savings in travel time and cost due to the improvement in transport infrastructure.

There exist two regional economy models which are similar to the strategic cross-border transport planning model that is the subject of this study. These are: (i) the model developed by the EU in 2004 to measure the effects of transport infrastructure development, and (ii) the METI (Ministry of Economy, Trade and Industry of Japan) model developed in 2006 which considers economies of scale. Their outlines are shown in Table 6.2.2.

Table 6.2.2 Selected Existing CGE Models

	CGEurope Model (2004)	METI Model (2005)
Developer	Brocker, J, et al.	Ministry of Economy, Trade and Industry of Japan
Structure and Features	<ul style="list-style-type: none"> • SCGE Model that was constructed and is being improved to measure the effects of transport infrastructure development. • Model as simple as possible that reduced the number of hypotheses and assumptions. • Transport model is included. 	<ul style="list-style-type: none"> • Imperfect competition, economies of scale, and input coefficient were introduced for 9 domestic regions. • Activities other than those of corporations (household economy, etc.) fall under the same category as the usual CGE model.
Input-Output Coefficients and Manufacturing Technology	<ul style="list-style-type: none"> • Variable or endogenous input-output coefficients enable estimating the policy-oriented changes in industrial structure. • Identified corporate technology by CES. 	<ul style="list-style-type: none"> • Input-output coefficients are variable. Concurrently, in respect of corporate manufacturing technology, the type of CES is used as in the case of "CGEurope."
Monopolistic Corporate Behavior	<ul style="list-style-type: none"> • Indicates no explicit monopolistic corporate behavior or markup ratio. • Considers the variety of artificial prices to reflect product differentiation. • Does not indicate fixed cost in the formulae regarding economies of scale. 	<ul style="list-style-type: none"> • Indicates variable markup ratio. • Explicitly considers monopolistic corporate behavior, introducing product differentiation and economies of scale (fixed cost). Estimates the number of corporations and fixed cost internally.
Armington Structure	<ul style="list-style-type: none"> • Introduces variety in a 2-layer structure to allow substitution between import and domestic production. 	<ul style="list-style-type: none"> • Regards domestic and imported assets as imperfect substitutes, and synthesizes with CES function.
Calibration	<ul style="list-style-type: none"> • Does not use unmeasurable variables. • Constructed based only on actually measured data. 	<ul style="list-style-type: none"> • Unmeasurable variables are set up by calibration.

3) Methodology of Project Evaluation

The strategic cross-border transport planning model has to be able to evaluate the possible volumes of traffic and trade vitalized by CBTI development, and their impacts on the regional economy. There are several kinds of basic approach for project evaluation as shown in Table 6.2.1.

Of the above-mentioned existing models, the ADB *GMS Transport Sector Strategy Study* is classified as the direct effect estimation model, while the CGEurope and the METI models are considered as the combined transport/regional economy model.

Table 6.2.3 Basic Approach for Project Evaluation

				Quantitative Method			Qualitative Method		
				Methodology		Assessor			
Goods Market	Financial Assessment			Analysis of balance of account		Enterprise	—		
	Economic Evaluation	Economic Impact Measurement	Individual measurement	Accumulation of effects		User/ Enterprise		• Scenario writing • Opinion Gathering (Delphi)	
				Direct Effect Estimation Model					
			Comprehensive Approach	Regional Economy Model	Econometric Model				Regional economy assumed in the model (Direct or indirect stakeholder)
		Industrial Input-Output Model							
		(S)CGE Model							
		Transport/Regional Economy Combined Model							
		Economic Benefit Measurement	Individual Measurement	Approach by Welfare Economics	Transport Model (Transport Demand Forecast Model, et al)				Economy assumed in the model (User & enterprise)
					Analysis of perception/behavior (user)				
					Market Analysis				
Non-goods Market	Environmental Impact Assessment (Technical external diseconomy measurement)			e.g. CVM et, al.		—			

Source: MORISUGI Hisayoshi, et. al. "Evaluation of Benefit of infrastructure Development" – Approach by general equilibrium theory.

6.3 Future Direction of Model Construction

1) CBTI Development and Strategic Cross-border Transport Planning Model

The strategic cross-border transport planning model measures the effects of the development of CBTI or its related institutions, such as customs, on the regional economy. This model has two submodels, namely transport model, which forecasts traffic demand, and regional economy model, which forecasts changes in regional economy.

Based on the Phase 1 report of this study, the following changes are considered to arise due to CBTI development:

- **Regionalization entails CBTI development.**
CBTI development increases passenger and goods flow in the region and promotes regionalization by strengthening internal linkages.
- **The ratio of internal trade in a region where CBTI is well developed is high.**
Trade promotion can be expected within a region through CBTI development.
- **Transport demand grows following the improvement of cross-border procedures such as the introduction of IT.**
Increase in freight volumes can be expected by enhancing cross-border services including the implementation of high-tech management.
- **Negative Impacts**
Negative impacts may stem from developing CBTI, such as increase in traffic accidents along with the growth in truck numbers, foul odor emanating from garbage transport, and further weakening of the economy of poor countries.

Therefore, CBTI can positively or negatively influence regional economy along with the changes in passenger and freight movement. It is important to assess these impacts not only qualitatively, but also quantitatively.

As mentioned earlier, however, there hardly exists a model that can provide quantitative measurement of the benefits/disbenefits of CBTI development. Most of the existing models engage only in qualitative assessment, except for the ADB research that has forecast changes in traffic flow as a result of CBTI development in the Greater Mekong Subregion.

On the other hand, it was reported in the field survey of this study that people in GMS countries are highly interested in the concrete changes to be generated by CBTI/CBTA development.

Therefore, it is expected that the strategic cross-border transport planning model, which would be a combination of the transport and regional economy submodels, should be developed not only to assess the changes in traffic flow, but also to comprehensively measure the economic impacts resulting from CBTI development. The development of such strategic cross-border transport planning model would be an intellectual contribution by JICA.

2) Approach to the Development of the Strategic Cross-border Transport Planning Model

The strategic cross-border transport planning model will rely on the available database.

This study assumes that all necessary databases could be obtained based on which a desirable model combining the transport and regional economy submodels will be discussed. Such model will enable the comprehensive measurement of economic benefits.

CBTI development will reduce transport costs and generate advantages to the industries and households in the influence area. The local economy will be vitalized by improving site conditions for local industries, and further regional growth will materialize through increased transport volumes. These effects will spread to other regions through interindustry linkages. The strategic cross-border transport planning model has to explain this process. It should also be responsive to various changes in cross-border transport not only in terms of hard measures (i.e. infrastructure) but also soft measures (e.g. strengthening traffic regulation and improvements in customs procedures). Moreover, the model should be capable of assessing economic competition among regions, the attribution of development benefits and changes in land use.

As described above, the strategic cross-border transport planning model requires a transport model which forecasts traffic demand, and a regional economy model which forecasts changes in the region's economy. The direction for model construction and database formulation is explained below. In addition, the transport model and the regional economy model are interrelated, having a nested structure like the existing CGEurope and ITT models.

(1) Transport Model

Transport model estimates changes in passenger and freight traffic in relation to CBTI development. The changes can be induced by two factors, i.e. route change and newly emerging induced traffic demand.

Route Changes

CBTI development would result in route changes. Due to shortened time and reduced transport cost, traffic on existing routes may shift to the newly developed routes. This includes the shift in transport modes such as from shipping to road.

As for the methodology of forecasting route changes, the route choice approach known as traffic assignment used generally in traffic engineering can be applied. This compares the generalized cost of feasible routes. The generalized cost is the sum of various transport costs and time costs of passengers and freight. As for traffic assignment, a number of algorithms have been developed on different hypotheses of route choice, and many of them are incorporated into the JICA STRADA which was developed by JICA. The 2005 transport sector strategy study of the ADB utilized JICA STRADA and estimated cross-border traffic volumes and benefits in relation to CBTI development.

With regard to logistics, the punctuality of transport services and the risk of freight damages should be considered in the route choice. Moreover, political/cultural barriers, as well as language differences, have to be quantified as cross-border impedance, as examined in the CGEurope model.

Cross-border transport forecast modeling is different from the conventional transport demand forecast in that the former involves very long trip lengths between origins and destinations, as well as complicated multimodal features. Trip time may extend to

several days depending on the selected modes. Besides, assessing the criteria of transport time and logistics cost would be different between the two methods depending on the cargo item. In this sense, the traffic assignment model including the transport network needs to be reviewed carefully.

Generation of Induced Traffic

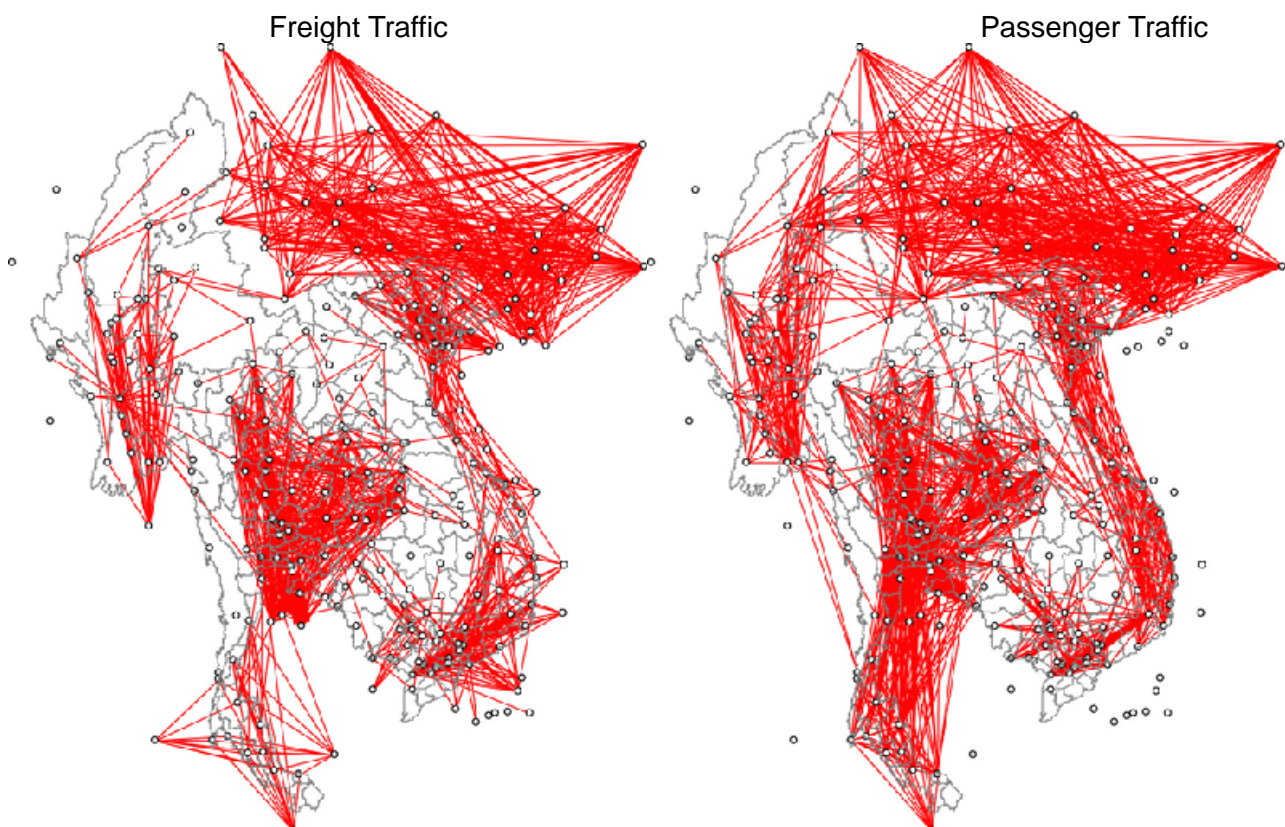
Induced traffic signifies the generation of new traffic and trade among regions due to CBTI development where before few activities had been observed.

The figure below illustrates the traffic flows expressed in the desired lines, according to the ADB study. While it shows the current traffic flow, the future pattern is expected to be similar since the projection is based on trends.

According to the ADB study, the OD pair which is not currently a regional corridor (eg Hanoi ⇔ Bangkok) will not have passenger and goods flows even in the future. Thus, route changes resulting from CBTI development cannot be accurately assessed. In addition, due to data unavailability, particularly on shipping ODs, intermodal analysis is not possible at present. This problem is true not only for the Greater Mekong Subregion but also for a wider area (e.g. Japan ⇔ Bangkok).

Aside from the changes in traffic volume due to route changes, induced traffic generated by the development of new trades is another important effect of CBTI development. However, induced traffic is hard to estimate amid the lack of historical data concerning province-wise socioeconomic indicators.

Figure 6.3.1 Desired Lines of Freight and Passenger Flows in the Greater Mekong Subregion



Note: Prepared by the Study Team based on the ADB's *GMS Transport Sector Strategy Study* (2005).

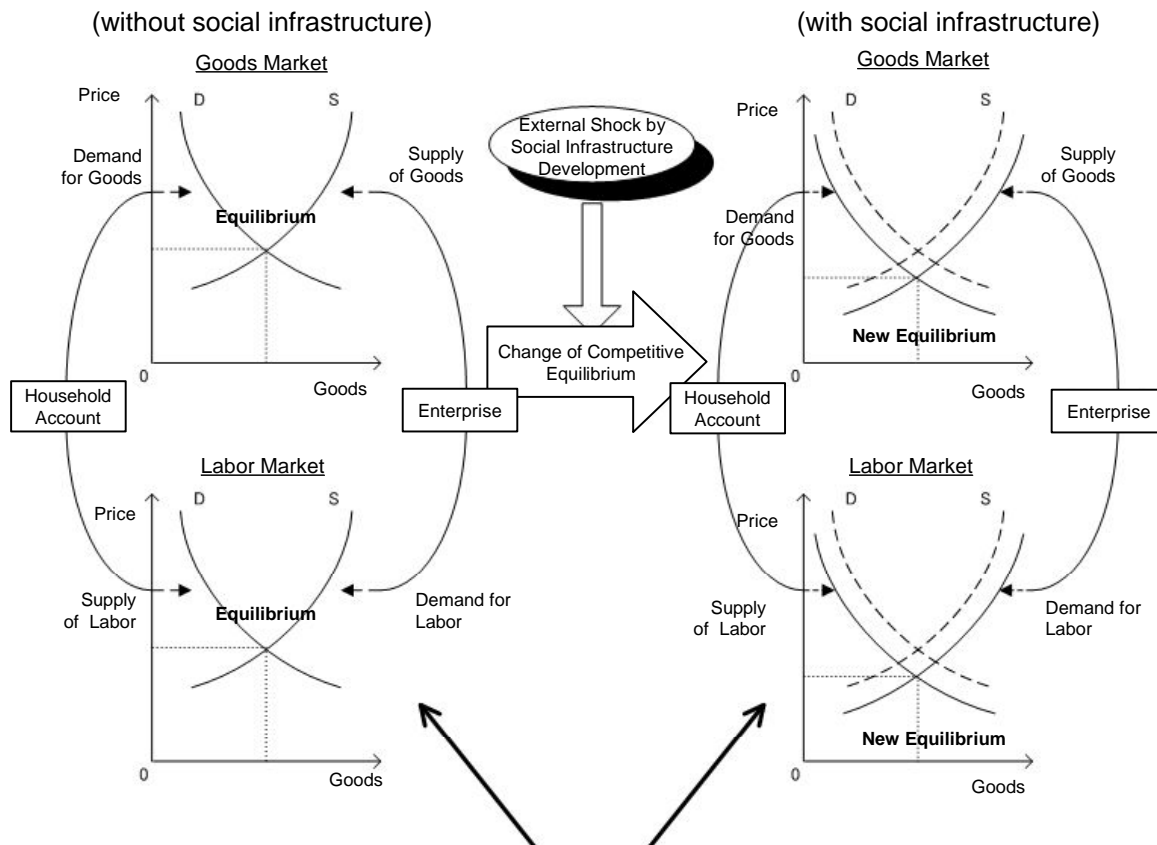
The gravity model is generally used to estimate induced traffic. This considers population, production, trade amount, etc. as a potential of each zone and distance, trip time, etc. as impedance. The basic model is available with JICA STRADA. In recent years the economics field has also applied the gravity model to estimate traffic volume, and there are some papers targeting the Greater Mekong Subregion.

A distinctive point between traffic engineering and economics is that the idea of a control total (fixed total traffic volume) is applied in traffic engineering. Accordingly, the total traffic volume in a region is sometimes assumed to be the same. But the economics field tends to assume ever-growing regional economy. Therefore, the total traffic volume computed by the gravity model is considered to increase. The characteristics of the subject region usually become the basis as to which way of thinking is preferable. In developing countries, however, the latter's assumption seems to be more appropriate.

(2) Regional Economy Model

The regional economy model will be based on the SCGE model which is highly generalized. The concept of the SCGE model is shown below. The development of social capital, including CBTI, is expected to create changes in the cost of transport services, and the impact will spread all over the region.

Figure 6.3.2 Concept of Computable Generalized Equilibrium Model



Measuring the Gap of Effective Level by Comparison of Both Figures

Source: Policy Research Center for Construction of Ministry of Construction, *Research of Structured Effect on Transport Network* 2000.

With regard to the more detailed industrial structure in the SCGE model, it is desirable to apply multinational industrial input-output tables. The model's overall structure is shown below. In constructing the regional economy model, it is desirable to introduce the following functions in connection with the available database:

Market Structure

Multinational trade will be the subject. By assuming an imperfect competition, a model which also permits monopolistic competition is desirable. In particular, such model would enable measuring the straw effect (ie deteriorating regional economy albeit trading has become facile) that may occur in small countries such as Cambodia and Laos.

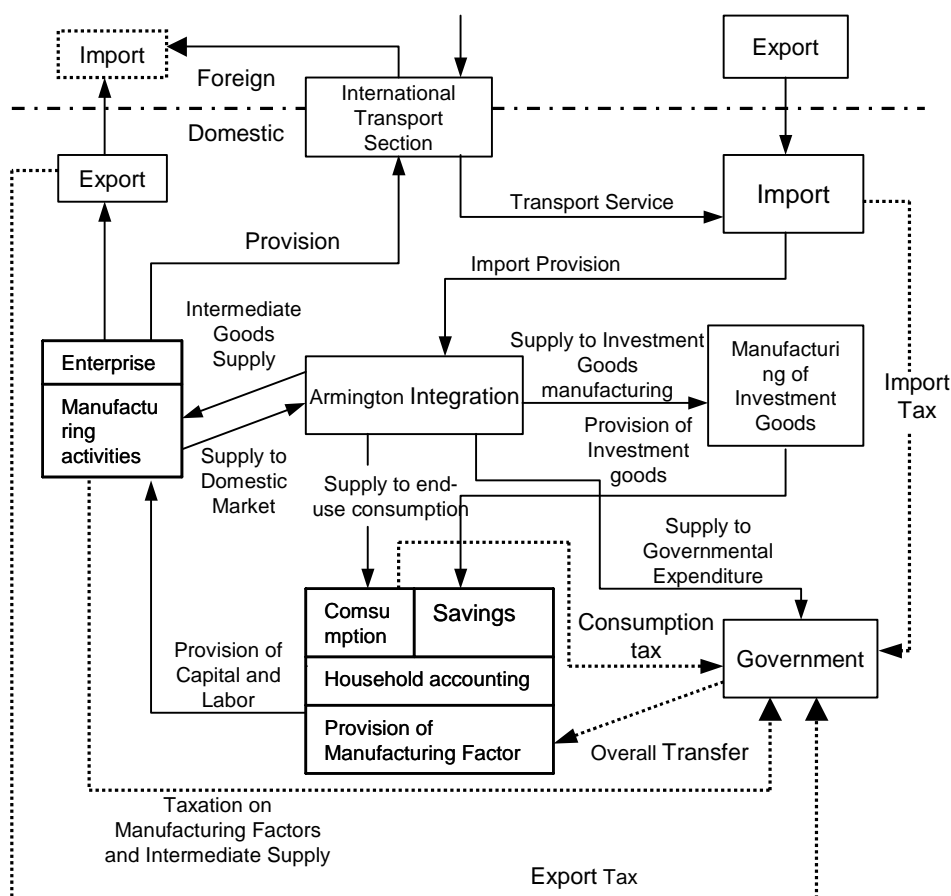
Industrial Structure

A variable industrial structure would preferably be assumed because CBTI development is likely to trigger drastic changes in trading.

Armington Assumption

It is unrealistic to assume a perfect substitution of own country for import from other countries in developing countries such as the GMS countries. A model of imperfect substitution is worth investigating.

Figure 6.3.3 Overall Structure of the Regional Economy Model (Flow of Assets/Services)



Note: Developed based on the METI model.