

# Benchmarking Economic Corridors logistics performance: a GMS border crossing observation

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## Abstract

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This paper introduces the Greater Mekong Subregion (GMS) cooperation program and its effort to facilitate the movement of goods, people and vehicles across borders to enhance economic integration between member countries. The GMS cooperation has focused on an economic corridor approach to development and a need to assess the logistics performance of these corridors was identified. Even though a regional agreement has been ratified to facilitate border crossings, an assessment observed that the weakest links in the various economic corridors remain the border crossings.

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## Introduction

The development of logistics services and communication technologies has revolutionised production and distribution processes and created a 'global' market. Shippers and consignees require efficient logistics services that can move their goods to the right place, at the right time, in the right condition, and at the right price.

The improvement of logistics in the Greater Mekong Subregion (GMS) can provide a foundation for further economic integration. For some countries in the subregion, inadequate transport infrastructure and high logistics service costs have constrained economic corridor development and integration. GMS countries are already investing in major infrastructure projects and more are planned.

Physical connectivity between neighbouring countries will be significantly improved on completion of these investments in infrastructure. Improved infrastructure, coupled with expanded cross-border cooperation among the GMS countries, can accelerate the process of integrating the subregion's economic corridors into the rest of the world and the global market.

The purpose of this paper is to introduce the GMS cooperation program and its effort to facilitate the movement of goods, people and vehicles across borders as well as to present an evaluation of the economic corridors' logistics performance. Improved border crossings play a key role in enhancing the logistics performance of the economic corridors under study.

## Background

The GMS comprises Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam, as well as Yunnan Province and Guangxi Zhuang Autonomous Region of the People's Republic of China (PRC). In 1992, with the Asian Development Bank's (ADB) assistance, the six countries entered into a program of subregional economic cooperation, designed to enhance economic relations among the countries (ADB, [www.adb.org/gms/](http://www.adb.org/gms/)).

The GMS cooperation program has contributed to the development of infrastructure to enable the development and sharing of the resource base, and promoted the freer flow of goods and people in the subregion. It has also led to the international recognition of the subregion as a growth area (ADB, [www.adb.org/gms/](http://www.adb.org/gms/)).

The GMS countries adopted the economic corridor approach to development during the 8th GMS Ministerial Meeting held in Manila in 1998. This holistic strategy seeks to improve and enhance investments in transport, energy, and telecommunications in the subregion.

A highly efficient logistics system means goods and people move around the subregion without excessive cost or delay. This improvement promotes further economic growth and regional development, thus contributing to poverty reduction. According to the ADB, an Economic Corridor has the following characteristics:

- Covers smaller, defined geographic space, usually, straddling a central transport artery such as a road, rail line, or canal;
- Emphasizes bilateral rather than multilateral initiatives, focusing on strategic nodes particularly at border crossings between two countries;
- Highlights physical planning of the corridor and its surrounding area, to concentrate infrastructure development and achieve the most positive benefits (ADB, [www.adb.org/GMS/Economic-Corridors/approach.asp](http://www.adb.org/GMS/Economic-Corridors/approach.asp)).

In the GMS, it is of great importance therefore that linkages among neighbouring countries are strengthened to facilitate trade and develop logistics for better access to the global market. This is particularly true for the three agreed upon GMS economic corridors: the North-South Economic Corridor (NSEC), the East-West Economic Corridor (EWEC), and the Southern Economic Corridor (SEC).

The NSEC has three branches that link Kunming-Bangkok, Kunming-Hanoi-Haiphong, and Nanning-Hanoi, respectively. The Kunming-Bangkok corridor travels through either Myanmar or through the Lao People's Democratic Republic (Lao PDR) or along the Mekong River. Thailand does not share a land border with the People's Republic of China (PRC).

The EWEC stretches from Mawlamyine in Myanmar to Danang in Viet Nam through several cities in Myanmar, Thailand, Lao PDR and Viet Nam. The 1,110 kilometre route is currently utilised, albeit there are some missing links. Infrastructure was constructed to support the physical linkages within the EWEC such as the 2nd Lao-Thai friendship bridge between Mukdahan (Thailand)-Sawanakhet (Lao PDR) and the Hai Van tunnel in Danang, Viet Nam. Today, physical connections within the EWEC are almost complete with some links needing rehabilitation in Myanmar.

The SEC runs through southern Thailand, Cambodia, and southern Viet Nam. Originally, the SEC consisted of only one route, the Bangkok (Thailand)-Phnom Penh (Cambodia)-Ho Chi Minh City-Vung Tau corridor.

To develop economic corridors, enhanced cooperation and integration are needed among GMS member countries. With infrastructure and service integration, enhanced opportunities will exist for cooperation on matters such as cross-border trade, co-production, and overland tourism.

Successful economic corridor implementation requires strong political will and the appropriate infrastructure with streamlined competitive procedures that enable the facilitation of cross-border movement of goods and people.

However, even with such a cooperation program, it was observed that many non-physical barriers to the cross-border movement of goods, people and vehicles still existed. In 1992, the GMS member countries had inconsistent and difficult border crossing formalities and procedures. Restrictive visa requirements and restrictions on entry of motor vehicles were normal, coupled with different standards on vehicles and drivers across countries. Transit traffic was difficult and sometimes not allowed for some member countries.

Figure 1: GMS Economic Corridors



Source: Asian Development Bank

In response to these non-physical barriers to the cross-border movement of goods, people and vehicles, the GMS countries agreed to work on a regional agreement that would help facilitate border crossings.

The GMS Cross-Border Transport Agreement (CBTA) is a compact and comprehensive multilateral instrument that covers all the relevant aspects of cross-border transport facilitation in one document. These include:

- single-stop/single-window customs inspection
- cross-border movement of persons (that is, visas for persons engaged in transport operations)
- transit traffic regimes, including exemptions from physical customs inspection, bond deposit, escort, and agriculture and veterinary inspection
- requirements that road vehicles will have to meet to be eligible for cross-border traffic
- exchange of commercial traffic rights and
- infrastructure including road and bridge design standards, road signs, and signals.

The CBTA applies to selected and mutually agreed upon routes and points of entry and exit in the signatory countries. The CBTA includes a preamble and 10 parts, and has 20 annexes and protocols ([www.adb.org/GMS/Cross-Border/annex.asp](http://www.adb.org/GMS/Cross-Border/annex.asp)).

The CBTA entered into force with its ratification by all six GMS member countries in December 2003. Full implementation of the Agreement and its annexes and protocols was expected for 2009 but the deadline has passed with many GMS countries having difficulties in implementing the agreement.

Signing and ratifying such a regional agreement does not mean that all the signatories are able to implement the modalities of the CBTA as numerous national laws need to be changed to accommodate the procedures prescribed by the subregional agreement.

## Methodology

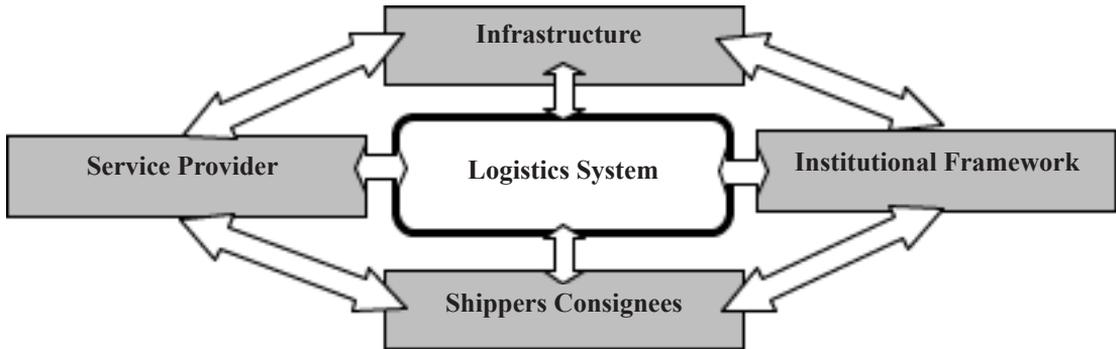
An evaluation model based on an in-depth understanding of the ‘as is’ situation of the logistics system of a geographical area is used as the measurement basis for four logistics related dimensions (Banomyong 2008). A ‘snapshot’ methodology to describe logistics activities in an economic corridor (Banomyong & Beresford 2001) is also used for an in-depth corridor understanding.

A regional or a macro logistics system comprises (1) shippers, traders, and consignees; (2) public, private sector logistics and transport service providers; (3) provincial and national institutions, policies, and rules; and (4) transport and communications infrastructure. These four logistics-related dimensions (see Figure 2) are inter-linked to determine the overall capability of the macro logistics system within the scope of the geographical area under scrutiny in terms of system capability and performance (Banomyong 2008).

## GMS logistics development

Roads are still the dominant domestic mode of transport infrastructure in all GMS countries. Thailand possesses the most developed road network and facilities with China. The new national airport, Suvarnabhumi, and modern seaports, such as Laem Chabang, support the movement of international freight. Myanmar, Lao PDR and Cambodia, on the other hand, are comparatively less developed. Even though the various GMS Economic Corridors in Lao PDR are physically complete, supporting logistics and border crossing facilities are still limited. Viet Nam’s infrastructure has been improved to cope with the new trade flow but maintenance issues will become critical in the near future.

Figure 2: Macro Logistics System



Source: Banomyong (2008)

In the GMS, trade and transport facilitation frameworks are in place but their implementation is still lacking. There is also a myriad of bilateral facilitation-related agreements that have coverage over different geographical areas. All GMS countries, except China, are parties to both the Cross Border Transport Agreement (CBTA) and the ASEAN Framework agreement for the facilitation of goods in transit (signed in 1998 in Hanoi).

There are also bilateral facilitation agreements for goods in transit between Thailand and Lao PDR as well as between Viet Nam and Lao PDR. The role of logistics service providers, the use of logistics outsourcing, and information technology in managing logistics, is relatively well developed in China and Thailand whereas these practices are still lacking in Cambodia, Lao PDR, Myanmar and Viet Nam. All GMS countries share a similar perspective on the fact that modern logistics practices have not been fully implemented yet.

GMS logistics service providers have developed rapidly and have played a strong supporting role to the manufacturing sectors. However, these companies are often small family-owned enterprises that cannot compete directly with multinational firms (for example, TNT, FedEx, and DHL). Logistics service providers in the GMS countries have different strengths and weaknesses. A common strength is their in-depth knowledge of the local market. Viet Nam is currently facing an acute shortage of qualified human resources, while the market in Lao PDR is still based on traditional logistics services such as customs brokerage and physical transportation. Thai and Chinese providers may seem to be more competitive but this is only true if the comparison is made with other GMS providers.

Logistics integration in the GMS is still mostly hindered by the institutional framework that is in place. A facilitating institutional framework (that is, the CBTA) is currently being implemented and details still need to be addressed, especially on how to apply all the various facilitation measures. This poses a challenge for all related agencies and stakeholders as new rules and regulations are being put in place with field operatives not knowing how to apply these new measures. This is particularly true at the various borders.

It can be said that Cambodia, Lao PDR and Myanmar is lagging far behind in terms of logistics developments when compared with China, Thailand and Viet Nam. Viet Nam, China and Thailand would still not be considered as 'world-class' but their respective national logistics system can be considered to be 'fair' (that is, more or less adequate). However, all GMS countries still require massive infrastructure and institutional development to meet the ever increasing international standard to sustain their competitiveness in the global market.

## GMS corridor analysis

The corridor analysis based on the proposed development model will reveal the actual development status of existing economic corridors. This assessment is based on the assumption that there exist different economic corridor development stages. These stages or levels can be defined as in Table 1.

Table 1: Economic Corridor Development Stages

Stage	Type of corridor	Definition
1	Transport	Corridor that physically links an area or region.
2	Multimodal	Corridor that physically links an area or region through the integration of various modes of transport.
3	Logistics	Corridor that not only physically links an area or a region but also harmonises the corridor institutional framework to facilitate the efficient movement and storage of freight, people and related information.
4	Economic	Corridor that is able to attract investment and generate economic activities along the less developed area or region. Physical linkages and logistics facilitation must be in place in the corridor as a prerequisite.

Source: Banomyong (2008)

This framework is used to assess the existing development level of the EWEC and the NSEC. Analysis of the SEC is not included in this research due to a lack of empirical data. The approach is based on a segmented perspective where each individual leg/section in each country is identified and assessed. The following assessment of the EWEC and the NSEC is presented in Tables 2 and 3. The NSEC assessment is based on the main route that links Bangkok in Thailand to Kunming via Lao PDR or Myanmar. This particular economic corridor is sometimes referred to as Route No. 3. The economic corridor via Myanmar is referred to as Route No. 3W, and the one via Lao PDR is known as Route No. 3E. There also exists a Mekong river connection between Chiengsaen port in Thailand and Jinghong port in China.

Table 2: EWEC Corridor Assessment Level

EWEC Section	Corridor Level Assessed
Tak-Mukdahan (Thailand)	Logistics corridor
Mukdahan-Sawanakhet border crossing (Thai-Lao)	Transport corridor
Savannakhet-Dansavahn (Lao PDR)	Logistics corridor
Dansavanh-Lao Bao border crossing (Lao-Viet Nam)	Transport corridor
Lao Bao-Danang (Viet Nam)	Logistics corridor
<b>OVERALL ASSESSMENT</b>	<b>Transport Corridor</b>

Source: Banomyong (2008)

Table 3: NSEC Corridor Assessment Level

<b>NSEC Section</b>	<b>To-From</b>	<b>Level</b>
Route No. 3	Bangkok-Chiangrai (Thailand)	Logistics Corridor
Route No. 3W	Chiangrai-Mae Sai (Thailand)	Logistics Corridor
Route No. 3W	Mae Sai-Tachilek (Thai/Myanmar border)	Transport Corridor
Route No. 3W	Tachilek-Mongla (Myanmar)	Logistics Corridor
Route No. 3W	Mongla-Daluo (Myanmar-Chinese border)	Transport Corridor
Route No. 3W	Daluo-Kunming (China)	Logistics Corridor
Route No. 3	Chiangrai-Chiangsaen (Thailand)	Logistics Corridor
Mekong River	Chiangsaen port (Thailand)-Jinghong port (China)	Transport Corridor
Route No. 3	Jinhong-Kunming (China)	Logistics Corridor
Route No. 3E	Chiangrai-Chiangkhong (Thailand)	Logistics Corridor
Route No. 3E	Chiangkhong-Houey Xay (Thai-Lao border crossing)	Transport Corridor
Route No. 3E	Houey Xay-Boten (Lao PDR)	Logistics Corridor
Route No. 3E	Boten-Moharn (Lao-China border)	Transport Corridor
Route No. 3E	Moharn-Kunming (China)	Logistics Corridor
<b>NSEC OVERALL ASSESSMENT</b>		<b>Transport Corridor</b>

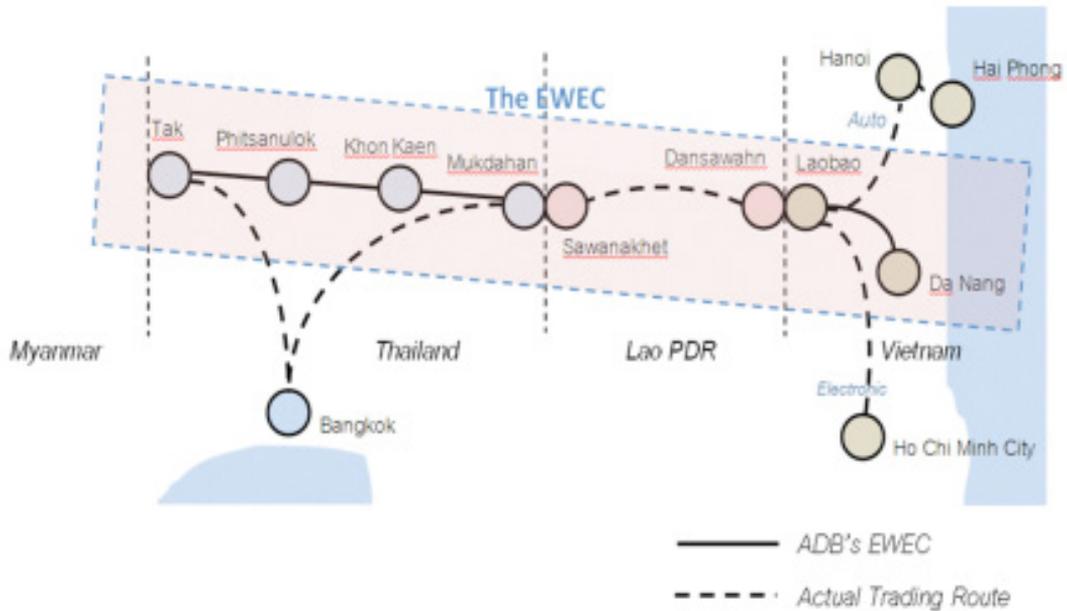
Source: Banomyong (2008)

The overall assessment level of the NSEC and the EWEC is based on the weakest link of the economic corridors. It must be noted that logistics corridors do exist but only within the boundary of a country and not at the NSEC, EWEC or cross-border level. The current status of NSEC and EWEC border crossings is still based solely on existing physical links as the institutional framework facilitating border crossing has not been totally implemented. This is why the overall logistics performance of both corridors is only assessed as transport corridors, as border crossings are the weakest link in integrating both economic corridors.

## **EWEC reality**

There are two main veins that exist within the EWEC: (1) the route from Tak to Danang which is the original EWEC route, designated by ADB, and (2) the private sector EWEC route that is currently being used which includes Bangkok and its industrial estates, Hanoi, Hai Phong and Ho Chi Minh City in Viet Nam as its origin and destination points.

Figure 3: EWEC Network



Source: Banomyong & Sopadang (2009)

Currently, commodity flows on ADB's version of the EWEC are almost non-existent (Than, 2005). The main existing product flows within EWEC are mostly from/to Bangkok/Laem Chabang of Thailand and from/to Hai Phong (automotive products) and Ho Chi Minh City (electronics products) of Viet Nam. Existing flows are illustrated by the dotted line in Figure 3. However, the scope of the paper is on the ADB's version of the EWEC which means that there is, in reality, no real flow of goods between Danang to Tak province at the border with Myanmar. A 'snapshot' of EWEC route based on information collected is discussed later in this paper. As seen in the model, transportation in itself is quite reliable as there is not much difference in terms of service time. The area which is less reliable from the graphical model is the border crossing and the entry into Viet Nam. This wide variation is based on a number of factors. The most common factor that increases the unreliability within the EWEC is the lack of appropriate import or transit documentation.

Based on the empirical evidence collected on the route between Danang and Tak, it is noticed that nearly half of the total 41.3 hours transit time (18 hours, equivalent to 43.5 per cent) is in fact taken at customs or border crossings based on each country's administrative formality. The non-synchronisation and complicated institutional framework are clearly hindering the smooth flow of goods across borders. From a cost perspective, 42.6 per cent of the door-to-door transport costs are collected at customs and border crossings. The amount is almost equivalent to the cost of physical transportation. This evidence is frightening and must be solved. The international institutional framework must be better arranged or implemented, if it has already been agreed upon.

In terms of reliability, it is noticed that Thailand and Viet Nam are slightly more reliable than Lao PDR in term of infrastructure, administrative and business operations. However, as an economic chain, the problem with the administrative process reliability is still evident in most of the EWEC area. There is little confidence in administrative processes. Reliability of local business operators is also considered to be limited compared to the multinational firms that are now entering the EWEC logistics market.

## Comparisons between the NSEC and the EWEC

It must be noted that this comparison is for illustrative purposes only as both the NSEC and the EWEC are subject to different characteristics. The transit time for the NSEC is more than 70 hours for the 1,800 kilometre journey compared to the less than 24 hours transit time for the EWEC. Therefore, the following benchmarking exercise is preliminary. The information presented below must be interpreted with great care.

*Table 4: NSEC/EWEC Cost Comparison*

Route	Physical Transportation	Non transport activity
NSEC: R3W	42%	58%
NSEC: R3E	40%	60%
NSEC: Mekong River	Road 32% River 15%	53%
EWEC:	56%	44%

*Source:* Banomyong (2008)

*Table 5: NSEC/EWEC Time Comparison*

Route	Physical Transportation	Non transport activity
NSEC: R3W	80%	20%
NSEC: R3E	85%	15%
NSEC: Mekong River	Road 32% River 54%	14%
EWEC: Danang-Tak	57%	43%

*Source:* Banomyong (2008)

The results from the benchmark table indicate that even though the EWEC's distance is comparatively shorter, the time taken on administrative formality at borders is the highest while the transportation cost has a greater ratio than that of the NSEC. The direct transport cost ratio in the EWEC is higher than in the NSEC sub-corridors. The EWEC seems to be relatively more efficient than the NSEC with a shorter time required for loading/unloading, administrative and customs formalities. This should not come as a surprise as there is a CBTA pilot site on the EWEC. This pilot site is located on the border between Lao PDR and Viet Nam.

However, it cannot be said which route is better or more facilitative in terms of transportation. It does indicate though that the synchronisation and standardisation of GMS borders are still lacking as there are still large variations and complicated border procedures that behave as obstacles.

It was observed that the ease of border crossing along the GMS is correlated to the value of the transaction. The higher the value, the less time taken at the border crossing, and vice versa.

## Conclusions

This paper has provided an overview of the logistics capability of key GMS Economic Corridors through the exploration of barriers to the free flow of freight, vehicles, people and information along each corridor. The physical route is currently completed but the supporting and administrative procedures are still lacking. Each GMS country is still at a relatively early stage in term of logistics development based on the four logistics dimensions. The GMS infrastructure is more or less completed but many of the border facilities are still insufficient and inefficient.

From the findings, trans-loading and border crossing still remain barriers to the seamless movement of freight, people and vehicles within the GMS. This is because ADB-led trade and transport facilitation measures have yet to be fully implemented by the member countries. The weakest link in the various economic corridors still remains the border crossing.

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