

# CHAPTER III

## Lao PDR Transport system and GMS Integrated Land Transport Network

This chapter describes the country's status as a land-locked country and the government policy to alter the country itself to become a land-linked country. Overview of Vientiane Capital and Savannakhet Province and its importance roles in Lao PDR as well as in GMS countries is also presented. In addition the GMS land integrated transport network in the region and GMS integrated land transport network in Lao PDR, transit transport corridors, including transport development during the past three decades are reviewed. Finally, the integrated land transport network variables and phases is introduced, which will be used to determine the evolution of the transport network in the past three decades and to examine the impact of the integrated land transport network on urban development.

### 1 Introduction to Lao PDR

#### 1.1 Lao PDR – Land-locked/Land-liked Country

*Lao People's Democratic Republic (Lao PDR)* is the sole land-locked country in South East Asia. The country is surrounded by five states: the Kingdom of Cambodia, the People's Republic of China, the Socialist Republic of Vietnam, the Kingdom of Thailand and the Union of Myanmar. Being a land-locked country, Lao PDR remains one of the least developed countries and has no direct access to the sea, which causes difficulties and constraints in the movement of goods in transit. This has a profound effect on the Lao economy and society.

Geographically, since Lao PDR is a land-locked country and shares borders with five neighboring countries, it is situated in the center of several actual or potential "growth poles", which could enable it to gain from transit trade and investment linkages with the surrounding countries. This may be viewed as the geographical keystone in the development and the progress of the Southeast Asian sub-region as a whole, as well as enhancing the further development and strengthening of existing friendly relations and cooperation. Lao PDR has seen the situation as an inland country as advantage as it becomes a full economic partner among countries of a dynamic region. In an address to the IFA / SEAPOL Conference on Cooperation Transit and Resource Management in January 2000, the Minister of Communication, Transport, Post and Construction for Lao PDR notes the following: "Our developing effort is to build up a

sustainable resources bases; taking full advantage of our *land-locked* situation is to be our foremost preoccupation".

The country first opened up to the world in 1982 and the major reforms "the New Economic Mechanism" in making decisions related to local and international markets was introduced in 1986. The adoption of a dynamic reform policy called the New Economic Mechanism in 1986 transforms the economy from a centrally planned to a market system, allowing all economic sectors to play an active role in business enterprises. Under this policy, Government of Lao PDR promotes competition in the market and encourages joint ventures between local and foreign investors with out political or legal discrimination. As Lao PDR continues to move from a "command" economy toward an open-market economy<sup>1</sup>, from a subsistence farming economy into more diversified and commercialized ventures, international trade will continue to grow in importance. Regarding the bilateral trade between Lao PDR and Thailand, several restrictions have been relaxed, including removing many items from the lists of prohibited supplies, opening of additional trading posts and relaxing the daily limit on the value of border trade. Since 1989, there have been further reduction in trade restrictions and additional permanent crossings were opened. More items were removed from the control list. The most recent amendment of the trade agreement was made on 20 June 1991. On 19 February 1992, a trade agreement was signed between Thailand's Board of Trade of Thailand and Lao PDR Federation Industries. In 1992 with the assistance of the ADB, the six countries that share the Mekong River— Lao PDR, Cambodia, Myanmar, Thailand, Viet Nam, and Yunnan Province of the People's Republic of China (PRC)—launched the Greater Mekong Sub-region (*GMS*) Program. The six countries entered into a program of sub-regional economic cooperation, designed to enhance economic relations among the countries.

The reform accelerated after Lao PDR accession to the ASEAN and the joining of AFTA in July 1997. The relations between Lao PDR and other countries in trade and economics has been enhanced, particularly the completion of the first Lao-Thai "Friendship Bridge" spanning the Mekong River and linking Thanaleng (Lao PDR) to NongKhai (Thailand) opened to traffic in April 1994. This enabled the country to gain from transit trade and investment linkages with the surrounding countries. It is clear that this bridge has resulted in the tremendous improvement in the transport accessibility and interconnectivity within the *GMS* countries. Since the transport of goods among *GMS* countries is faster and more reliable, therefore the share of freight and passenger by land transport in Lao PDR has been continually increasing, while the percentage share of the water and air transport has been decreasing - replaced by land transport. In addition, the length of the roads increased significantly to respond to the need of the increased transport

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<sup>1</sup> Open Market Economic Systems: Decentralization, Private Ownership, Markets, Competition, Incentives, International Economic Integration.

volume throughout the country during this time frame. This resulted in the significant improvement of the accessibility level of certain areas, especially the city along the main integrating routes. The completion of the first Mekong International bridge, the more reliable and convenient integrated regional land transport network, facilitated better access to both domestic and international markets and services. Regarding the economy policy, the adoption of a stabilization program since 2000 and the implementation of a phase's program of reforms since 2001 in public expenditure management, banking, state-enterprises, forestry, and trade has contributed to this improvement<sup>2</sup>. Besides, a Joint Trade Committee (JTC) was established on 22 May 2000. The first JTC meeting was held by Thailand during 16-17 July in Bangkok. Accordingly, an agreement on road transportation was signed on 17 August 2001. In addition Lao PDR has been given permission from Thailand for transportation of goods in transit to and from a third country. During these periods the land transportation's integration within GMS country has been increased gradually. Together with open door investment policy of Lao PDR to increase the investment cooperation with Thailand, which leads to the further increased transportation of goods and passengers, resulting in both economic and urban development within the country. The National Poverty Eradication program, articulating a medium term program of reforms and public spending program has been discussed at the National Assembly. Various actions have been taken during 2003, in respect public expenditure management, state-enterprises, banking, natural resource management, and trade and private sector development even if they were taken more gradually than was originally expected

Lao PDR's membership of the ASEAN Free Trade Agreement (AFTA) renders benefits including the intention to free up the movement of capital and to increase investment and industrial links among members. ASEAN members are also expanding the provisions of the AFTA to include primary agriculture – an important development for an agrarian economy such as Lao PDR. Located at the center of an expanding regional economy, Lao PDR could also capitalize from the growth in development opportunities of its three immediate neighbors (Yunnan (China), Viet Nam and Thailand) which are all recovering from the recent economic crisis. Lao PDR faces the challenge of its integration into the global economy as long as the current move toward liberalization is not reversed or stalled. The country has been changing in a very fundamental way under the impact of various interacting forces of economic integration that are shaping the GMS economic landscape.

The opening of the second bridge in 2006 at Savannakhet/Mukdahan was important. Currently, there is an extensive development of transportation and communication links in Lao PDR for Savannakhet Province. The construction of a bridge crossing the Mekong River to link

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<sup>2</sup> Based on the report of Lao National Chamber of Commerce & Industry, 2004

Thailand to Vietnam via Lao NH9, is one example of the development in this area. Not only that, the NH9 eases communication from border to border, but it is also connected with the high standard national highway route number 13, which will facilitate transport of goods from this area to northern and southern provinces. With such a complete network, goods from this border trade area could be transported easily and effectively. In this time frame, the improved transport system developed together with the completion of this new bridge the in Savannakhet Province definitely facilitated better access to international markets.

Regarding the government policy in this time frame, the sixth socio-economic development Plan (2006-2510) has been set up and implemented with the aim to accelerate economic growth and improve people's quality of life, restructuring economy and employment structure in building market economy, based on the country's rich resources and international integration. The sixth socio-economic development plan also aims to further build market economy with socialist orientation. Continue enlarge and develop effectively external; economic relations. Create a breakthrough changes in education and training in terms of quality and quantity, using achievement in sciences and technology, protecting environment, taking human, sciences and technology factors as a vehicle for development. Develop culture, society in synchronously with economic growth. Continue poverty reduction, crating jobs, eliminating social evils. Continue strengthening socio-economic infrastructure as fundamentals fro development in 5 year plan and for next year plan. Maintain political stability and social security, protecting sovereignty, untouched territory and national security. Other policy related to the international cooperation among region and sub-region is follows:

*Northern region:* Focus will be made to create socio-economic infrastructure which is important and necessary for integrating the regional economy with the sub-region in accordance with the plan of GMS and those that have regional and local significant.

*Central region:* Optimizing the use of the existing EWEC infrastructure and encouraging the development of the special economic Savannakhet - SENO zone as well as border trade between Savannakhet and Lao Bao.

*Southern Part:* Step up the development of the Southern region's economy which is based on the economic master plan for the Lao PDR- Vietnam- Cambodia triangle and the Lao PDR Vietnam Cambodia emerald triangle.

## 1.2 Overview of Vientiane Capital and Savannakhet Province

### 1 Vientiane Capital

Vientiane is the dominant city in, and capital of, Lao PDR. Vientiane is a political and administrative center, a market town, and the conduit through which a considerable quantity of imported goods find their way to customers in the city and the surrounding area. Much of the industrial production centered on Vientiane Capital is for national domestic consumption. The potential of the nation is directly reflected in the potential of the city. New houses are being built on the immediate outskirts of Vientiane Capital. Indeed, Government officials indicate that the economy of Vientiane Capital is expanding, and business confidence of many formal sector industries in and around the city appears to be relatively high.

- 84% Expect sales to increase over the coming 1-2 years.
- 95% Expect exports to increase over the coming 1-2 years.
- 25% States that the expansion of the factory in the coming 1-2 years was likely.

Source: GHK-Formal Sector Industrial Survey, Vientiane, June-August, 2000

### 2 Savannakhet Province

Savannakhet Province is located in the Southern part of Lao PDR sharing border with Khammouane Province to the North, Saravan Province to the South, Vietnam to the East and Thailand to the West. From this geographical viewpoint, Savannakhet Province has a strategic location as it shares a border with two countries, an advantage in terms of access to foreign markets and the potential of attracting foreign investments. Savannakhet Province is the largest province with 15 districts and 125,977 households. In addition, Savannakhet Province has the largest population in the country accounting for 15% of the total population. It is expected to reach 494,000 in the year 2010. This growth ensures a labor force would be available for any industrial development.

Savannakhet Province houses the National Highway route number – (NH9), which is considered as the Asians strategic highway connecting the East with the West of the region. It stretches in an easterly direction, from Laos-Vietnam border through Vietnam to the South China Sea giving access to China, Hong Kong, Taiwan, Indonesia, The Philippines, Korea, Japan and North and South America. Going in a westerly direction across the new bridge at Savannakhet/Mukdahan it provides access to Thailand, Myanmar, Malaysia, and Singapore and via the Andaman Sea to India, Africa, Middle East and Europe.

Savannakhet Province through Ubon Ratchathani and the Thai National Highway 23 crosses the Mekong at Mukdahan. The second international bridge across the Mekong River links Mukdahan to Savannakhet. The Department of Highways of Thailand plans to also widen the highway route from Mukdahan to Laem Chabang through Ubon Ratchathani into a four-lane highway. The distance between Savannakhet and Bangkok is 663 kilometers.

## **2 Greater Mekong Sub-region (GMS)**

### **2.1 Overview of GMS**

The Greater Mekong Sub-region (GMS) comprises Cambodia, the People's Republic of China, Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam.

The sub-region embraces flora and fauna that have expanded northward along the Malay Peninsula into Thailand, encroached upon the high mountains from the Himalayas, or advanced along the broad river valleys as dry deciduous forests similar to those of India. Ten million years of changing sea levels have left a rich legacy of unique life forms that have evolved in isolation on the Cardamom and Annamite Mountains of Cambodia, Lao PDR, Thailand, and Viet Nam. These resources provide both income and sustenance to the great majority of people in the sub-region who are leading subsistence or near subsistence agricultural lifestyles. The land yields timber, minerals, coal, and petroleum, while water from the many rivers supports agriculture and fisheries and provides energy in the form of hydropower. The coal reserves of the sub-region are abundant, and the oil and gas reserves considerable. Most of these are in Myanmar, Thailand and Viet Nam. These abundant energy resources are still relatively underused.

About 300 million people live within the GMS region, and their common link, the mighty Mekong River winds its way for 4,200 kilometers through their midst. The great majority of these people live in rural areas where they lead subsistence or semi subsistence agricultural lifestyles. More than 75 percent of the population of Lao PDR, for example, is rural and even in Thailand, the most urbanized of the Mekong countries, there remain large agricultural communities, particularly in the north and northeastern parts of the country. While traditional lifestyles and deep-rooted customs and beliefs have been scarcely altered by time, the area is now undergoing greater change than ever before. With the onset of peace in the 1990s, the peoples of the Mekong are experiencing rapid changes and improvements in their living standards and conditions.

Increasingly, modernization and industrialization are emerging from a process of transition and transformation. The Mekong countries are gradually shifting from subsistence farming to more diversified economies, and to more open, market-based systems. In parallel with this are the growing commercial relations among the six Mekong countries, notably in terms of cross-border trade, investment, and labor mobility. Moreover, natural resources, particularly hydropower, are beginning to be developed and utilized on a sub-regional basis. The rich human and natural resource endowments of the Mekong region have made it a new frontier of Asian economic growth. Indeed, the Mekong region has the potential to be one of the world's fastest growing areas.

## **2.2 The GMS Program**

Since 1992, the countries of the GMS have embarked on a program of economic cooperation (the GMS Program) that aims to promote development through closer economic linkages. The GMS Program, with support from Asian Development Bank (ADB) and other donors, helps the implementation of high priority sub-regional projects in transport, energy, telecommunications, environment, human resource development, tourism, trade, private sector investment, and agriculture.

Substantial progress has been achieved in terms of implementing GMS projects over the past 12 years. Priority infrastructure projects worth over US\$6 billion have either been completed or are being implemented. Among these are the upgrading of the Phnom Penh (Cambodia)-Ho Chi Minh City (Viet Nam) highway and the East-West Economic Corridor that will eventually extend from the Andaman Sea to Da Nang. A significant amount of resources has been mobilized for the GMS Program.

The strategic framework of the GMS Program is founded on a common vision, goals and strategic thrusts for regional cooperation.

The GMS countries envision a Mekong Sub-region that is more integrated, prosperous and equitable. The GMS Program will contribute to realizing the potential of the sub-region through:

- (i) an enabling policy environment and effective infrastructure linkages for enhanced economic cooperation;
- (ii) development of human resources;
- (iii) and respect for environment and social interests to ensure sustainable and equitable development.

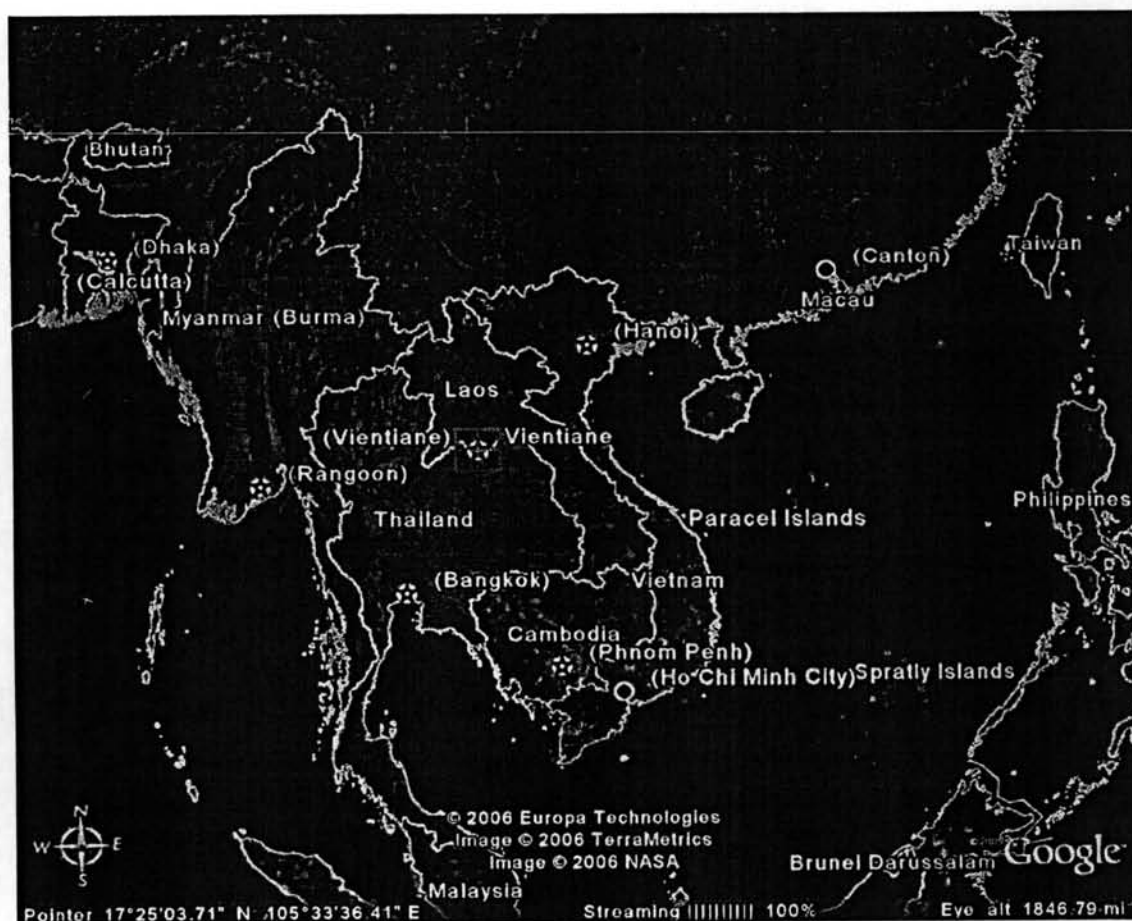
### 2.3 The GMS Strategic Framework

A 10 year strategic framework for the GMS Program was formulated by the six countries with the assistance of ADB in 2001. This strategic framework was endorsed by the six GMS Leaders at their first Summit held in Phnom Penh, Cambodia in November 2002. It envisions a well-integrated and prosperous Mekong sub-region – free of poverty and committed to protecting the environment that is vital to the sub-region's future wellbeing. The framework focuses on five development thrusts to achieve this goal:

- (i) strengthen infrastructure linkages through a multi-sectoral approach
- (ii) facilitate cross-border trade and investment
- (iii) enhance private sector participation in development and improve its competitiveness
- (iv) develop human resources and skill competencies
- (v) protect the environment and promote sustainable use of the sub-region's shared natural resources.

Strategically, the GMS vision seeks to achieve enhanced connectivity, increased competitiveness, and a greater sense of community in the GMS. Greater connectivity will help to physically integrate the region. Road, rail, water and air transport systems, together with telecommunications and power systems, are to be strengthened to set up better networks among the six GMS countries and to fortify linkages with other networks in Asia and the rest of the world.





**Figure 3.1 GMS Countries**

Source: Google Earth (2006)

#### 2.4 GMS Land Integrated Transport Network

The GMS program was initiated in 1992 with the objective of facilitating results oriented regional cooperation. GMS initiatives for regional economic cooperation include policies, agreements, infrastructure and services supporting increased cross border trade and tourism. Other significant ongoing and/or proposed GMS initiatives concern telecommunication technology, regional power interconnection, and private sector participation, human resource skills development, environment management, flood control and water resource management.

The concept of an Economic Corridor was first proposed during the Eighth Inter-Ministerial meeting for the GMS, held at the ADB in October 1998. The Economic concept was proposed to bring a focus to the GMS in terms of geography and space in order to accelerate the pace of cooperation.

The Eight GMS Ministerial meeting discussed five possible corridors (figure 3.4)

- Kunming-Mandalay-Yangon
- Kunming-Lao PDR-Bangkok
- Kunming-Hanoi-Haiphong
- East-West Economic Corridor (EWEC)
- Yangon-Bangkok-Phnom Pen- Ho Chi Minh City rail corridor

The meeting endorsed the Economic Corridor concept which is geographically designated areas that facilitate the transnational movement of goods, services, finance, people and information. They have been developed around the world as a mechanism to promote cross-border trade, investment and export-oriented production. For the GMS, the EWEC offers an unprecedented opportunity to accelerate regional cooperation and raise living standard. *Given its land locked status, Lao PDR inevitably relies on cooperation with its neighbors in the GMS as an essential part of national economic development.*

## 2.5 GMS Integrated Land Transport Network in Lao PDR

The major ports in the region are Lam Chabang (Thailand), Hai Phong, Danang, and Vungtau (Vietnam), which are gateways to the global market; therefore the corridor should be connected to the gateways(s). The East-West Corridor in the eastern part is to be considered as a route from Bangkok to north and/or central Vietnam through the central and southern part of Lao PDR. The following routes are to facilitate commodity flow in the region.

- (i) Bangkok – Udonthani - (Friendship Bridge) – **Vientiane Capital** - (Route 13, Route 8) Vinh – (Route 1/Route 10) -Hanoi/Haiphong)
- (ii) Bangkok- Nakhon Phanom - (ferry) – Thakek - (Route 13/12, Route 8)- Vinh (Route 1/Route 10) - Hanoi/Hai Phong
- (iii) Bangkok – Mukdahan – (Second Mekong bridge) – **Savannakhet** (Route13/12, Route 8) – Vinh - (Route 1/Route 10) - Hanoi/Hai phong
- (iv) Bangkok – Mukdahan – (Second Mekong bridge) – **Savannakhet** – (Route 9, Route 1) – Danang
- (v) Bangkok – Ubon – Pakse – (Route 18) – Danang

## 2.6 The Important Role of Vientiane Capital and Savannakhet Province in GMS Countries

### - Vientiane Capital:

Vientiane Capital is expected to benefit from the opportunities that are likely to be associated with the GMS co-operation and development strategy. Laos and its capital city are located near to the geographical heart of the GMS and the landlocked nature of Laos and Vientiane, within the GMS, is expected to transform it from a "national liability to a national asset".

Vientiane Capital could become an important center for distribution and logistic activities related to the increasing trade associated with GMS co-operation, and the location of higher value production based on, and evolving from, existing formal sector industries. The opportunity also exists to link the local (informal) economy and the formal economy in the city in ways which are focused on poverty reduction. This could entail for example, local sub-contracting, vocational training and other skill upgrading programmes particularly targeted at the urban poor.

**Figure 3.2 Important Role of Vientiane Capital in GMS**



Source: Asian Development Bank (2000). Vientiane Urban Infrastructure and Services. Vientiane Lao PDR.

**- Savannakhet Province:**

Savannakhet Province plays a very important role in the GMS program as it is situated along the East West Economic Corridor (EWEC). The concept of the "Economic Corridor" is defined by ADB as follows:

*"An economic corridor is a well defined area where infrastructure improvements are linked with production, trade and other development opportunity in order to promote economic development and cooperation among contiguous regions or countries". ADB expects the role of EWEC as follows: "The East West corridor as conceived would provide the central regions of Vietnam Lao PDR and Thailand and the southern region of Myanmar with a direct outlet for trade with southern China, Philippine, Korea and Japan to the east of and with Bangladesh and eastern India to the west. The combination of the improved access to international trade and reduced impediments to cross-border trade would accelerate the economic development of the less development area located along the corridor"*

EWEC is a major factor to change the geo-economic position of the CRB<sup>3</sup>. Firstly, the area has a better access to the Danang port as a direct outlet for trade with outside of the GMS. Secondly, and more important for the future of the CRB, the area will be at the crossroads of inland transportation network in GMS. Thus, EWEC has more immediate potential as a part of inland network to connect economic centers within the GMS rather than to provide outlets to connect GMS to the outside world.

Currently, there is an extensive development of transportation and communication links in Lao PDR for Savannakhet Province. The construction of a bridge crossing the Mekong River to link Thailand to Vietnam via Lao by national highway route number 9 (RN9), is one example of the development in this area. The completion of this new bridge has been not only made the RN9 Asia's strategic highway that connects the east with the west and definitely improves transport and communication, but boosts trading activities in the region as well. The road network in Savannakhet Province is fairly good with the total length of road being almost 5000 kilometers. In addition, the RN9 is built as a high standard tarred road suitable for the transport of goods to reach the destination with no delay. Not only that, the NH9 eases communication from border to border, but it is also connected with the high standard national highway route number 13 (RN13), which will facilitate transport of goods from this area to northern and southern provinces. With such a complete network, goods from this border trade area could be transported easily and effectively.

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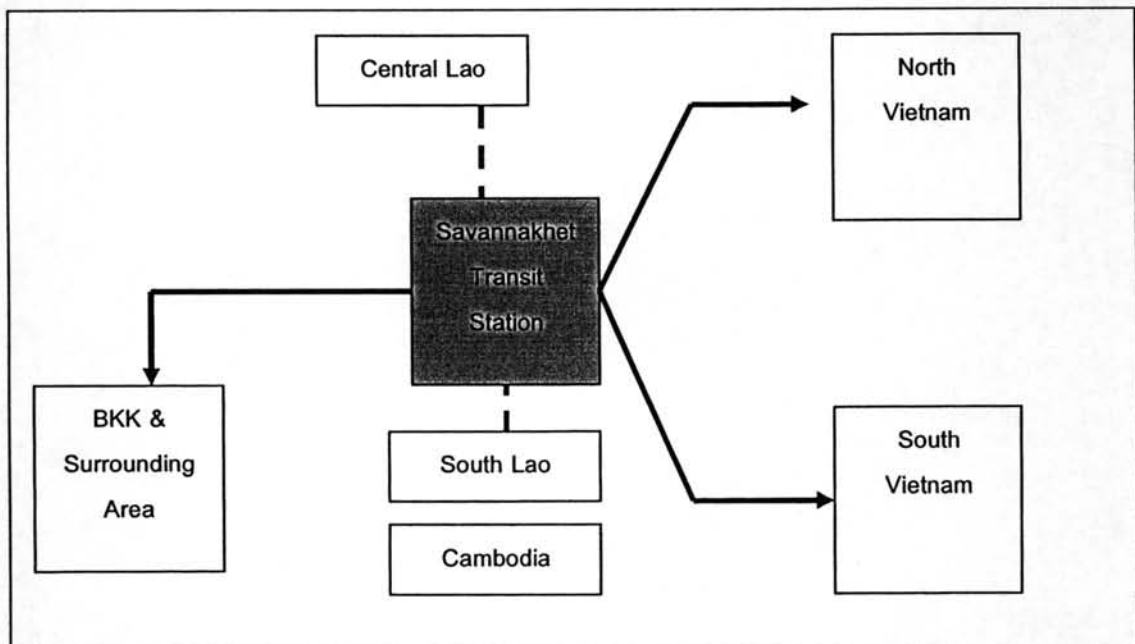
<sup>3</sup> CRB (Cross Border Region) consists of SKR (Savannakhet and Khammouane) and NBR (Mukdahan, Nakhon Phanom, Saakon Nakhon, Katalasin)

The improved transport system developed in Savannakhet Province facilitated better access to international markets. In addition, the improved transport system reflected the better transport capacity, reliability and level of service. Simultaneously, the transportation and transit time saving have been improved significantly. Due to its own characteristics, together with the government policy implications, Savannakhet Province has become one of the most attractive areas in Lao PDR. This, in turn, favored the location of new manufacturing activities in cities with large market potentials (Figure 3.3) A more open economic policy that permitted more international trade, especially the trade activities between Lao PDR, Thailand and Vietnam, has accelerated the growth of the economic activities and thus sped up the economic growth of Savannakhet Province and surrounding regions. This demonstrates there is a close relation between market potentials, economic growth, urban industrial development and population growth.

Under the concept of the East West Economic Corridor, Savannakhet Province has the following functions:

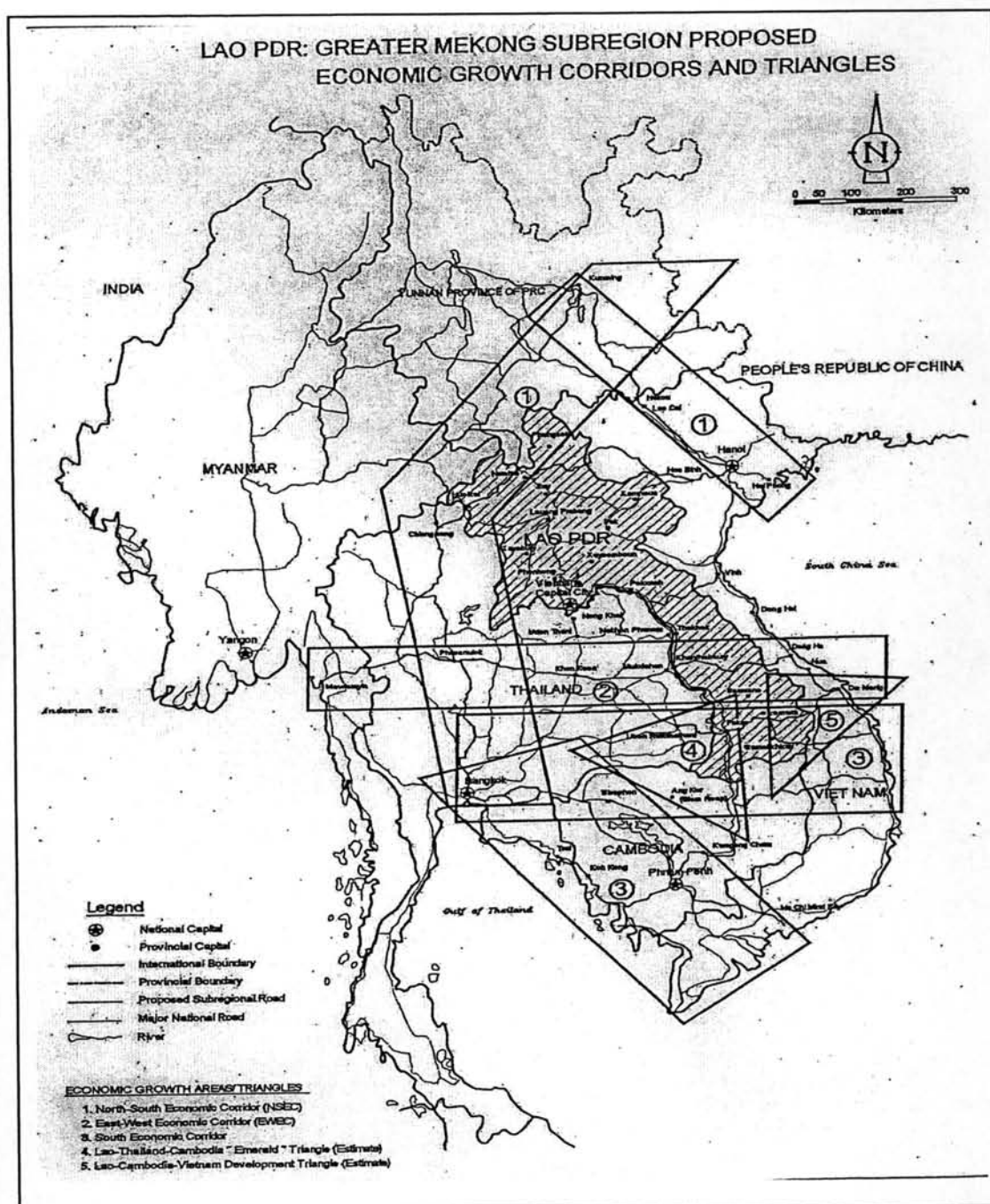
- The industrial center of central and southern Lao PDR
- The transit station of the domestic exported goods to Thailand and Vietnam, and
- The international station of the goods between Thailand and Vietnam

**Figure 3.3 Important Role of Savannakhet Province in GMS**



Source: Japan International cooperation Agency, Office of the National and Social Development Board (2001). The study on the Integrated Regional Development Plan for the Northern Border Region in the Kingdom of Thailand.

Figure 3.4 Lao PDR: GMS Proposed Economic Growth Corridors and Triangles



Source: Asian Development Bank (20035). TA 4377- LAO: Northern and Central Regions Water Supply and Urban Development Project Preparation of Urban Sector Strategy & Investment Plan (2005-2020).

Figure 3.5 East – West Economic Corridor Main Urban Centers



Source: Asian Development Bank (20035). TA 4377- LAO: Northern and Central Regions Water Supply and Urban Development Project Preparation of Urban Sector Strategy & Investment Plan (2005-2020).



### 3 Transport Development in Lao PDR

#### 3.1 Land Transport development

Provision of infrastructure facilities, especially the development of the transport network, is one of the most important tasks of the government to overcome the severe poverty that entraps so many people in the country. The government has been taken steps since its establishment after 1975 to improve the situation. During the 1980s the largest portions of the road investment were allocated to new networks such as the access road to the district and villages. Constructions of these new alignments were needed in order to increase the accessibility of all the villages in the provinces. A small portion of the road investment was used in physical improvements such as realignment, pavement and safety concerns. The expansion of the existing road network, together with the provision of other infrastructure facilities, has been stressed during this period according to the policy of the Lao government in eradicating the poverty of the population of the whole country. As the result, numbers of large districts were integrated into other areas by the expansion of the new road network in 1990s.

Due to the fact that during 1980s most of the developed existing road networks remained in the core districts of the provinces which locate at the Thai border side rather than Vietnam/China/Cambodia border. The government, therefore not only expanded the road networks outward from the core district in each province to be connected with other district road networks, but also to be connected with other neighboring country road networks, especially with those in Vietnam, China and Cambodia.

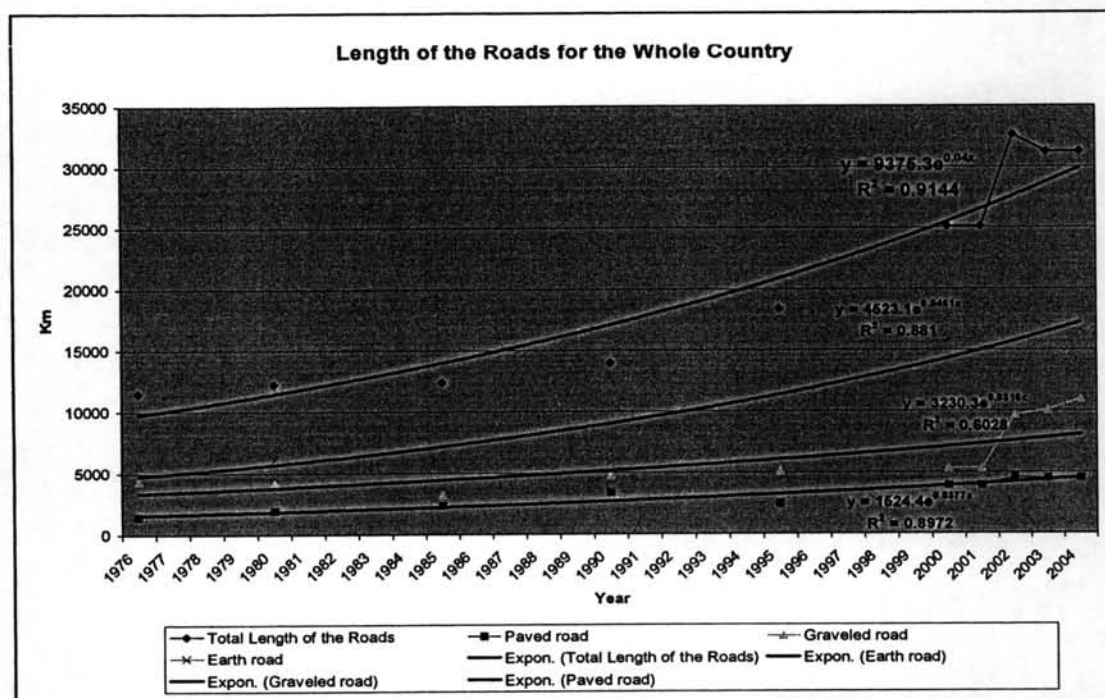
The government continues its efforts in both the construction of new road networks and also improvements to interregional highway conditions during 1985-1995. The main developments in the network after 1990s generally emphasized not only the existing pattern (i.e. the NR 13 which consists of road 13N and 13S (1,230 kilometers); an all-weather road between Botene (Lao/Chinese border) in the north and Veunkham in the South at the border with Cambodia; the road links Luangphabang in the north with the major urbanized areas of Vientiane Capital, Savannakhet and Pakse, over a distance of 1,091 kilometers; the highways road no. 9 connecting the East with the West of the region) but also 8,952 kilometers of provincial roads and 16,512 kilometers of district roads. The improvements of the national highways aimed to increase the accessibility and connectivity within the country and to integrate the country with the other neighboring countries in the long term, especially the improvements of the national highways to link with Vietnam, China and Cambodia transport networks.

The road conditions have been improved to accommodate the rapid increase in traffic volume from Thailand to Lao PDR and Vietnam due to the opening of the first crossing Mekong Bridge. The *Mittaphap* or "*Friendship Bridge*", spanning a length of 1170 m, with two 3.5 m-wide lanes for vehicle traffic, two 1.5 m-wide footpaths and an unfinished single railway line in the middle, straddling the narrow central reservation; linking Thanaleng (Vientiane, Lao PDR) to NongKhai (Thailand), opened to traffic in 8 April 1994. It was obvious that this bridge made the transport of goods between the two countries faster and more reliable.

By the year 2000 there were more than 4,497 kilometers of all-weather roads in Lao (out of a total of 7,160 kilometers) and the majorities were equipped with two paved lanes. These important achievements significantly reduced the mileage between the provinces and facilitated movement between the major cities in the northern, central and southern parts of the country. In addition, *the construction of the Second Bridge over the Mekong linking Mukdahan, in Thailand, to Savannakhet, in Lao PDR*, was opened to traffic by late 2006. The bridge has two traffic lanes and is 12 meters wide and 1,600 meters long. It is part of the land transport development plan of the East-West economic corridor. Consequently, the traffic volume has been rapidly increased during the late 2000s.

The figure 3.6 and table 3.1 has shown the actual increased length of the roads for the whole country. It can be seen that the most rapid increase of the length of the roads occurred during 1995-2004, which was the period after the opening of the first Mekong crossing bridge, which resulted in the huge transportation volume increase within the country. The most rapid increase of the length of the roads occurred during 1995-2004 due to the huge investment in developing a comprehensive integrated land transport network to respond to the need of the increased transport volume throughout the country during this time frame.

Figure 3.6 Improvement of the Road Network in Lao PDR



Source: Ministry of Communication, Transport Post and Construction, Lao PDR. (2005)

Table 3.1 Total Length of the Road in Lao PDR at Province District

Total Length (km)	1999	2000	2001	2002	2003	2004
Vientiane Capital	1401.7	2096.34	2096.34	2096.34	2096.34	2096.34
Phongsaly	649.5	650.7	650.7	650.7	1041.95	1260.62
Loungnamtha	696.4	1122.72	1122.72	1198.17	1230.02	1261.12
Udomxay	1020.3	1208.66	1208.66	1146.91	1221.84	1418.92
Bokeo	625.6	856.86	856.86	751.73	927.74	1001.22
Luandprabang	1259.7	1346.07	1346.07	1473.07	1268.12	1742.37
Xayyaburi	1662.1	1887.69	1887.69	1920.07	2026.37	2123.11
Huaphan	1237.8	1564.1	1564.1	1608.1	1654.8	1728.16
Xiengkhuong	1648.5	1743.3	1743.3	1656.39	1721.25	1927.5
Vientane Province	1152.7	2055.75	2055.75	2063.15	2076.2	2214.65
Borikhamxay	1141.4	1566.6	1566.6	1770	1626.7	1774.1
Khammoun	1487.3	3031.23	3031.23	3024.65	2492.83	3112.4
Savannakhet	1836.3	4718.61	4718.61	4840.62	4828.79	4999.96
Saravan	2500.5	2699.66	2699.66	2655.95	1588.58	1782.58
Champasak	2461	3017.58	3017.58	2934.27	2920.25	2920.21
Xekong	414.7	889.38	889.38	944.75	892.65	722.41
Attapeu	1103.3	923.77	923.77	953.2	1044.01	1044.04
Xaysomboun Special Zone	907.9	980.51	980.51	936.16	971.46	982.76

Source: Ministry of Communication, Transport Post and Construction, Lao PDR. (2005)

### 3.2 Water Transport

The Mekong River, which flows through Lao PDR for some 1,800 kilometers, is the main navigable inland waterway in the region. During the 1980s the water transport system was one of the important means of transportation in the countries. This is due to the limitation of the road network system and the poor quality of the road network itself, Therefore transportation along the major and minor rivers was considered necessary, especially in the rainy season. The Mekong River provides a natural means of transport and is capable of carrying international trade from China downstream past Vientiane to, at least, Savannakhet/Mukdahan. Most parts of the river are navigable but there are difficulties on various sections. Its navigational use is limited to 1,190 kilometers. The section between Vientiane and Savannakhet is the most suitable for river transport, in spite of the shallow sand-bars and some narrow rocky passages with strong currents. Below these cities, rapids between Savannakhet and Pakse permit only seasonal travel due to low water levels during the dry season. Between Pakse and the Cambodian border, the Khone Phapheng Falls prevent river through traffic.

During the 1990s the land transport network has been improved significantly, and replaced certain portion of water transportation. However, the water transport system still continued to improve both with its equipment and its operations. Luang Prabang, Vientiane and Savannakhet have important river ports. There are several ports at Luang Prabang, two of which are: Ban Pak Kham, an old passenger port with customs and immigration check points; and That Luang, a cargo port built in 1989 with the assistance of the Australian Government. The two ports near Vientiane are: Laksi, completed in 1990 is located 4 kilometers downstream from Vientiane; and Thanaleng, 16 kilometers from Vientiane (but 34 kilometers downstream from Vientiane) with roll-on roll-off facilities for river ferries. This port served cross-river traffic before the construction of the Mekong River Friendship Bridge. There are also several smaller provincial and municipal ports on the Mekong River. Transportation of goods and passengers by water has varied yearly due to the river conditions. However, a significant improvement in this area can be observed during the last three decades. Transportation of goods by river has increased since 1976, with the then traffic volume of 22,000 tons, and the volume reached 939,900 tons in 2004.

### 3.3 Air Transport

Air corridors throughout Lao PDR vary depending on the security conditions. A hub system of domestic air services throughout the country is operated by Lao Aviation and is based in Vientiane – Wattay, Luang Prabang and Pakse. Domestic air transport, though small in volume, plays a significant role in providing passenger services between large urban areas and to

otherwise inaccessible areas. The development of an air transport capability was inevitably important for urban integration in a country.

Lao PDR has three international airports. The Vientiane Airport (Wattay) can accommodate the Jumbo Boeing 747. The airport in Luang Prabang can accommodate the Boeing 737-400 Medium and Pakse is the third international airport. By late 2000 regular direct air services to major cities in neighboring countries were established. These included: Bangkok, Chiang Mai, Hanoi, Ho Chi Minh, Phnom Penh and Kunming. There is currently an excess of air cargo space for the limited traffic offering. As the aircraft currently in use are comparatively small and do not accommodate air cargo containers, all air freight is either handled on pallets or loose.

As a gradual step toward an Open Sky Policy in ASEAN, Lao PDR has just signed an agreement with Viet Nam, Cambodia and Myanmar allowing these countries' airlines to carry passengers to a third country. On October 29, 2000, Viet Nam Airlines started a flight service between Hanoi – Vientiane – Phnom Penh– Ho Chi Minh. This new route is aimed at the tourist trade and expanding economic relations between the three countries. It hopes to attract more and more tourists from Western Europe and North East Asia to visit the Indochina region. It is estimated that over 4 million passengers will travel to Viet Nam, Lao PDR and Cambodia by the end of the year. This Open Sky Policy allowing more airlines to Lao PDR is a challenge for the aviation sector which must be improved to meet the demands of the growing network of competitive air services.

### **3.4 Railway Transport**

Although a railway system does not exist in Lao PDR, the Friendship Bridge was designed to allow for a rail line along the center of the bridge in the future. The State Railways of Thailand (SRT) has already completed the section between NongKhai and the middle of the bridge as an extension of the existing Thai railway from Bangkok to NongKhai. It is now Lao PDR's responsibility to continue the construction of the rail line to, at least, Thanaleng. Thanaleng is located on the Mekong River opposite the Thai city of NongKhai. All freight with final destinations beyond Thailand and Viet Nam is currently handled through this facility.

On March 20, 2004 an agreement between the Thai and Lao governments was signed to extend the railway to Thanaleng in Laos, about 3.5 km from the bridge. This will be the first railway link to Laos. On February 22, 2006 approval of funding for the further development of the rail line was announced by the French Development Agency. The Thai government agreed to finance completion of the link to Thanaleng, while the French are backing a second phase, to Vientiane, a distance of about 30 kilometers.

### 3.5 Lao PDR Transport Strategy

The development of the regional road network, including completion of the rehabilitation of NR13, and the GMS Northern Economic Corridors (NR3 through Bokeo and Mekong Bridge at Houeisai) and East-West Corridor (NR9 and a Mekong bridge at Savannakhet Province) projects, will reduce the costs of interregional trade and provide the Lao PDR with viable alternative Land transport routes to the sea.

Proposals to construct a Trans-Asia rail link, which may pass through the Lao PDR, would further enhance regional land routes and improve competition, by providing an alternative transport mode.

Telecommunications is also to be enhanced by the provision of a network of optical cable links to the surrounding countries, connecting the main centers in the Lao PDR to the international network.

Tourism is one of the strongest growth sectors, and became the country's top foreign exchange earner in 1999. This sector is recognized to have considerable further growth potential.

The development of markets for Lao PDR exports, the cost of imported goods, and foreign exchange earning from tourism all depend on good regional transport connections, particularly land access to ports in Thailand and Vietnam, and efficient and safe regional and domestic air service. Additionally, trade facilitation between the Lao PDR and its neighbors is an important element in efficient and competitive international trade

The Nongkhai – Vientiane Capital rail link is the only rail project that may be feasible for development in the short to medium term. This was conceived as a private sector project and was found not to be financial viable but to have good economic rate of return. Any further consideration of this project should await the completion of current projects on trade facilitation.

Large scale navigation improvements to the Mekong between the PRC border and Luang Prabang are being pursued under the GMS umbrella, with the PCR being the main proponent. Smaller scale improvements to navigation, landings, and transport services are desirable for tourism and general domestic transport development between Houeisai and Luang Prabang. The transport services and facilities and facilities at landings would be financed by the private sector. There may be an opportunity for ADB funding assistance with landings and navigation, but this would need to take account of the PRC's larger scale plans if these proceed. Improvement to

transport in the Upper Mekong would provide shorter alternatives to road travel between Houeisai, Pak Beng, and Luang Prabang, although the advantage will be reduced as the road network is improved in the area. Transport on the lower river from Luang Prabang to Savannakhet Province is declining as the road network is improved, and investment will be difficult to justify. Other developments from Pakse to the Khong Fall are mainly tourism related and private sector initiatives.

#### 4 Lao PDR Transit Transport Corridors

Lao PDR is surrounded by five countries, namely Myanmar, Thailand, Cambodia, Vietnam and the People's Republic of China. It has a number of official border crossing, entry/exit points to control the movements of goods and passengers with each of them and has road border crossing with all except Myanmar. Road transport is the dominant mode of transport within Lao PDR and will continue to dominate both freight and passenger traffic to/from neighboring countries in the foreseeable future.

Lao PDR can also use transit transport corridors west through Thailand and the ports of Bangkok and Laem Chabang; east through Vietnam and the ports in Central Vietnam of Cua Lo, Xuan Hai, Vung Ang, Da Nang and Quy Nhon and the port under construction of Vung Ang, and south through Cambodia and the port of Sihanoukville.

##### 4.1 Transport Corridors via Thailand

The Agreement on Road Transport between the Government of Lao PDR and the Government of the Kingdom of Thailand was signed on March 5, 1999 with the "Protocol defining the details of the road transport". Six international check-points for transit traffic along with three local check-points for cross border traffic have been designated, which are shown below.

**Table 3.2 Transport Corridors via Thailand**

Border gates on the Lao PDR side	Lao PDR Road (RN) / Thailand Road	Border gates on the Thailand side
International Check Points		
Houayxay (Bokeo province) Thanaleng (Vientiane Capital Municipality) Thakhek (Khammouane province) Savannakhet Province (Savannakhet Province province) Vangtao(Pakse ) (Champassak )	RN1 A 12 RN 12 RN9 RN16 RP 13 S	Chiang Kong (Chiang Rai province) Nong Khai (Nong Khai province) Nakhon Phanom (Nakhon Phanom) Mukdahan (Mukdahan province) Chongmek (Ubon Ratchathani) Bungkane ((Nong Khai province)

Paksan (Bolikhamsai province)		
Domestic Check Points		
Namngeun (Sayaboury province) Kenthao (Sayaboury province) Paktaphane (Salavan Province)		Houei Kone (Nane province) Nong Pheu (Leuy province) Pakse ng (Ubon Ratchathani)

Source: Ministry of Communication, Transport Post and Construction, Lao PDR. (2005)

Thailand is the main transit corridor for Lao PDR's third country trade. The main flow of imports arrive in Lao PDR through Thanaleng near Vientiane Capital, while the larger share of exports pass through Savannakhet Province, since the main producing areas for export commodities (wood, coffee) are located in the south of the country. Imports to Lao PDR through Thailand or exports from Lao PDR through Thailand are shipped via the port of Bangkok or the port of Laem Chabang, or to any of the private ports located on the river within metropolitan Bangkok.

All transit cargo for Lao PDR, regardless of the point of exit from Thailand, must first be delivered to a transit warehouse at KlongToey. This warehouse located adjacent to the port of Bangkok, is made available exclusively for the use of the Lao PDR. Klong Toey is considered the gateway of Lao PDR imports.

Transit goods to/from Lao PDR can be moved between Bangkok (Klong Toey) and Vientiane Capital or Savannakhet Province or Pakse in Lao PDR. The three main transit corridors currently available are (1) Thanaleng (Lao PDR) and Nong Khai (Thailand); (2) Savannakhet Province (Lao PDR) and Mukdahan (Thailand); and (3) Pakse (Lao PDR) and Chong Mek (Thailand).

(1) **Thanaleng (Vientiane Capital) transit corridor:** Cargo is generally transported from Klong Toey to Vientiane Capital via a transshipment point at Nong Khai in Northern Thailand. Traffic from/to Bangkok to/from Nong Khai can follow one of two alternate modes of transport, road or rail. From Nong Khai, which is on the Thai side of the Mekong River, cargo is transported in Lao PDR by truck to the river port of Thanaleng, reached after crossing the Friendship Bridge over the Mekong River. The highway from Bangkok (Klong Toey) to Nong Khai is a four lane standard highway in good condition. It is heavily used by trucks carrying cargo to and from northern Thailand. The railway also has a connection between the transit warehouse at KlongToey and Nong Khai. In Nong Khai, the track is extended close to the ramp and goods brought by rail are transferred to trucks to cross the Mekong River.

(2) **Savannakhet Province transit corridor:** Savannakhet Province through Ubon Ratchathani and the Thai National Highway 23, crossing the Mekong at Mukdahan (Thai border



town). The second international bridge across the Mekong River linking Mukdahan to Savannakhet Province was opened to traffic by 2006. The Department of Highways of Thailand plans to also widen the highway route from Mukdahan to Laem Chabang through Ubon Ratchathani into a four-lane highway.

(3) **Pakse transit corridor:** Pakse (Champasak province), the Lao RN 16 crosses the new bridge over the Mekong river, which opened to traffic in August 2000, reaches Vang Tao/Chong Mek (Lao/Thai border). From Chong Mek, the Thai Provincial Highway 217 heads to Ubon Ratchathani and the Thai National Highways 23. The distance between Pakse and Bangkok is 747 kilometers (Pakse to Chong Mek is 42 kilometers). The former route between Pakse and Bangkok (through Savannakhet Province) was 903 kilometers.

#### 4.2 Transport Corridors via Vietnam

Under the Agreement on Road Transport between Lao PDR and Vietnam signed in 1996, eight check-points have been designated from North to South as follows:

**Table 3.3 Transport Corridors via Vietnam**

Border gates on the Lao PDR side	Lao PDR Road (RN) / Vietnam Road (QL and PR)	Border gates on the Vietnam side
<b>International transit traffic</b>		
1. Keo Nua (Na Pe) (Bolikhamsai)	RN 8/QL 8	Keo Nua (Cau Treo) (Ha Tinh )
2. Dean Savahn (Savannakhet Province)	RN9/QL9	Lao Bao (Quang Tri province)
<b>Cross border traffic</b>		
3. Sop Hun (Phongsali province)	RN 4/PR 42/ QL 279	Tay Trang (Lai Chiu province)
4. Sop Bau (Houaphan province)	RP 6 /QL 43	Pa Hang (Son La province)
5. Ban Loi (Houaphan province)	RN 6 – PR 217/QL 217	Nam Meo (Thanh Hoa province)
6. Namkan (Xiengkhouang province)	RN 7 /QL 7	Nam Can (Nghe An province)
7. Tong Kham (Khammouan)	RN 12/ QL 29	Cha Lo (Keo Mu Gia)
8. Giang Gion	RN 18/QL 40 Bo Y	Bo Y

Source: Ministry of Communication, Transport Post and Construction, Lao PDR. (2005)

When shipped through Vietnam, most Lao PDR imports and exports use the port of (1) Da Nang and to a lesser extent the ports of (2) Cua Lo (Nghe An Province), (3) Xuan Hai (Ha Tinh Province) and (4) Quy Nhon (Binh Dinh Province). In addition, The Government of Vietnam has offered Lao PDR the use of the port (5) Vung Ang (Ha Tinh Province) which is currently under construction.

There are presently two main transit transport corridors from Lao PDR connecting Cua Lo port and Da Nang port: RN8 starting from Paksane, (Vientiane Capital – Paksane; 140 kilometers – RN13S); and RN9 from Savannakhet Province (Vientiane Capital – Savannakhet Province, 453 kilometers – RN13S). Two other transit transport corridors are also considered: (3) RN 12 from Thakhek to connect Vung Ang port – a port under construction in Vietnam that has been envisaged to become a port dedicated to Lao PDR transit goods. (Vientiane Capital – Thakhek, 353 kilometers) and (4) RN 18 from Pakse through Attapeu which needs to be partly constructed.

All these roads pass through difficult topography, all have steep gradients and tight radius curves, making it difficult for under-powered vehicles to ascend and potentially dangerous for heavy vehicles to descend. Without improvement, none of these routes could support heavy traffic such as container trailers. Three of these corridors are part of the East-West Transport Corridors Project (R2) to link Thailand-Lao PDR-Vietnam.

The Asian Development Bank and the Mekong River Commission carried out a comprehensive study with the objective of linking ports in central Vietnam to northeastern Thailand through central Lao PDR. This study included the following roads:

(1) **Road 8 (RN 8)** connecting Paksane (capital city of Bolikhamsay Province) with Cua Lo port (near Vinh) Paksane – Cua Lo port, 257 kilometers; Paksane – Vientiane Capital, 140 kilometers.

(2) **Road 9 (RN 9)** runs east from Savannakhet Province into Vietnam to the port of Cua Viet in Quang Tri province (337 kilometers) and the port of Da Nang (944 kilometers) Vientiane Capital – Savannakhet Province, 453 kilometers (Route 13 S) and Savannakhet Province – Da Nang, 508 kilometers (Route 9). Road 9 starts from Savannakhet Province and continues via Xenô to the Lao – Vietnam border at Lao Bao.

In Vietnam, the QL9 starts from the Lao PDR/Vietnam border at Lao Bao to reach Dong Ha (Quang Tri Province) on Highway QL1 (86 kilometers). From Dong Ha, traffic turns south on Highway QL1, to reach the port of Da Nang. (Dong Ha – Da Nang, 176 kilometers).

(3) **Road 12 (RN 12)** starts from Thakhek to reach Vung Ang port, 313 kilometers; Vientiane Capital – Thakhek (Khammouan), and 353 kilometers; Savannakhet Province – Thakhek, 116 kilometers. Road 12 starts from Thakhek on RN 13S. Thakhek – Mu Gia (Lao PDR border with Vietnam), 142 kilometers.

(4) Road 18 (RN 18) connects Pakse to the ports of Qui Nhon or Da Nang. Road 18 starts at the intersection between Road 13S and Road 13A or Road 10. The southern corridor crosses the Boloven Plateau in Lao PDR, with the towns of Paksong, Ban Taut, continuing with the new road constructed by the Korean Contractor Daewoo for the power station of the Houay Ho project. This new road shortens the previous distance from Pakse to Attapeu (via Sekong) by 60 kilometers.

#### **Vietnamese Ports for Lao PDR Transit Trade**

The national ports in Vietnam serving as sea ports for transit traffic to and from Lao PDR include: (1) Cua Lo port in Nghe An Province; (2) Xuan Hai port in Hai Tinh Province; (3) Da Nang port in Quang Nam Da Nang Province; and (4) Quy Nhon port in Binh Dinh Province. In addition, new ports which are under rehabilitation and construction at Vung Ang in the Ha Tinh Province have been designated by the Government of Vietnam for handling transit cargo of the Lao PDR.

(1) The port of Cua Lo, located 20 kilometers northeast of Vinh, was developed with the assistance from the former Soviet Union, to serve transit traffic to and from Lao PDR via Route 8. The port is linked by a narrow, 13 kilometers asphalt road to Highways QL 1. At present, ships of up to 5,000 dwt can enter the port. The port has many limitations, in particular a serious problem which requires regular dredging to get depths of 7.5 meters required for 5,000 dwt ships. The port has two berths (330 meters quay). Its current annual traffic capacity is estimated at 500,000 tonnes. A project is planned to construct two more berths dedicated to general cargo and to log exports from Lao PDR.

(2) The port of Xuan Hai (Hai Tinh Province) is located on the Lam River 9 kilometers from the junction of QL 8 and Highways QL1 is about 25 kilometers closer to Lao PDR than Cua Lo port. Major dredging is required to allow vessels of up to 5,000 dwt to enter. The port features a 65 meter long, 7 meter deep berth constructed last year for Lao PDR transit traffic. The port can serve vessels of up to 3,000 dwt. Dredging of the access channel is required to allow vessels of up to 5,000 dwt to enter. The port of Xuan Hai had been considered for some time by the Vietnamese Ministry of Transport as a possible Lao PDR transit port. Logs from the Lao PDR have accounted in the past for a substantial share of the traffic at Xuan Hai.

(3) The port of Vung Ang, at the west of Mui Ron Cape, is linked with the Highways QL 1 by a 9 kilometer road. It is 157 kilometers south of Cua Lo port and 107 kilometers south of Xuan Hai port. The port has natural depths of 9-15 meters suitable for the accommodation of large

vessels up to 70,000 dwt. It needs a short access channel requiring little capital and maintenance dredging. The port was designed by TEDI, a Vietnamese national consulting firm, on the basis of the exploitation of iron ore in the Thakhek region.

Protected against typhoons and the NE winds, the port's location is the most favorable in the northern part of the central region. A first berth for general/break bulk with a 13 meter depth will be completed by 2001. The Vietnamese Government is under discussion with Lao PDR Government to use Vung Ang port as the new transit port for Lao PDR imports and exports in conjunction with the rehabilitation of Road 12 between Lao PDR and Vietnam.

(4) The port of Da Nang, Vietnam's third most important commercial port is situated in a bay south of Hue and serves as a transit port for traffic to and from Lao PDR via Route 9. Da Nang is also considered a potential growth centre, with substantial scope for industrial development and tourism. Da Nang comprises a new seaport at Tien Sa, established on the Tien Sa rocky peninsula with the potential of serving ships of up to 15,000 - 25,000 dwt and a river port at Song Ha which is the old port established on the river banks of the city. Tien Sa has two 182 m x 27 m piers located 110 meters apart. The total capacity of the Tien Sa port is estimated at 1,800,000 tones by Vietnam marine but more reasonably is of the order of 800,000 tones.

(5) The port of Quy Nhon is located in a well-protected bay 340 kilometers south of Da Nang, accessible by a 3 kilometers long channel. Quy Nhon is a potential outlet for the southern Lao PDR Provinces of Attapeu and Champassak.<sup>11</sup> The port has two piers with a total length of 350 m and a depth of 7.5 m at the berths for 10,000 dwt ships. Its annual capacity is estimated at 500,000 tones.

#### **4.3 Transport Corridors via China**

Under the Agreement concerning International Road Transport between the Government of the People's Republic of China<sup>4</sup> and the Government of the Lao People's Democratic Republic dated December 3, 1993, four border check-points between Lao PDR and China have been selected.

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<sup>4</sup> China is not a transit country for Lao PDR. On the other hand, Lao PDR can become an important transit country for China as its transit trade particularly with Thailand is expected to increase dramatically over the next 25 years. Two sub-regional land transport projects – project R3 and project R8, studied by ADB have been considered to service transit traffic from/to China through Lao PDR.

**Table 3.4 Transport Corridors via China**

Border gates on the Lao PDR side	Lao PDR Road (RN) / China Road	Border gates on the China side
Botene (Luang Namtha province)	RN13	Bohane
Lanthuy (Phongsaly province)	RN1	Paksa
Paka (Phongsaly province)	RN 19	Ban Chom
Panthong (Luang Namtha province)	RN 3	Muong Mam

Source: Ministry of Communication, Transport Post and Construction, Lao PDR. (2005)

#### 4.4 Transport Corridors via Cambodia

The distance (in kilometers) between some regional centers in Lao PDR to Thai Vietnamese and Cambodia ports are as follow:

**Table 3.5 Transport Corridors via Cambodia**

Border gates on the Lao PDR side	Lao PDR / Cambodia Road	Border gates Cambodia side
Veune Kham (Kinak)	RN 13 S	

Source: Ministry of Communication, Transport Post and Construction, Lao PDR. (2005)

In the long term, this corridor could also provide Cambodia with direct access to China through Lao PDR. Project (R6), the southern Lao PDR to Sihanoukville road improvement studied by ADB, is the most direct link between southern Lao PDR and Cambodia. From Pakse to the Lao PDR/Cambodia border, the road RN13S is a bituminous one of 168 kilometers. From the border, the southern Lao PDR to Sihanoukville corridor follows Route 7 south to Skun. From Skun the route follows Route 6 to Phnom Penh (Lao PDR/Cambodia to Phnom Penh, 550 kilometers), although the road is in need of rehabilitation. Between Phnom Penh and Sihanoukville, the Route 4 connects the capital of Cambodia with the country's only deep sea port, 223 kilometers. Other Lao PDR sub-regional land transport routes crossed by five ASEAN Highway Transport Routes includes AH3: Botene – Luang Namtha – Houeisay, 253 kilometers; AH6: 12 Vientiane Capital – Cambodia border, 861 kilometers; AH4: Natrey – Oudomsay – Luang Prabang – Vientiane Capital – Thanaleng, 682 kilometers; AH7: Nape – Ban Lao, 132 kilometers; and AH8: Savannakhet Province – Lao Bao, 240 kilometers (*MCTPC Report, 2003*)

## 5 The Integrated Land Transport Network Variables and Phases

### 5.1 The Integrated Land Transport Networks Variables

Based on the empirical observation and the detailed analysis of historical patterns of the development path of Lao PDR transport network system, the developmental path of the Lao PDR transport network system could be divided into several phases. Therefore the indicator called "*the integrated land transport development phases*" has been created to understand the evolution of the transport network itself and to examine the impact of the integrated land transport network on urban development.

*The integrated land transport development phases* indicate the degree of integration of Lao PDR to the international community which depends on the following variables:

1) Improvement of cross border facilities is a major factor reflected in the evolution of the degree of integration. If the border is totally closed, this results in a non integration level with other countries. Therefore *border crossing infrastructure* is a major variable of the *integrated land transport development phases* which is used to calculate accessibility. Improvement of the border crossing infrastructure is definitely reflected in the significant increased traffic flows within the country. It is obvious that the decision to make a cross-border trip, to establish international trade relationships or to move, or to establish a firm or a household permanently, in a different country is influenced by accessibility rather than less tangible factors. Therefore provided border crossing infrastructure is available with less political and cultural barriers to the border crossing, it is of importance. Different political systems, bureaucracies and legislation, different languages, different cultural and historical backgrounds, and also tolls, trade restrictions or physical barrier influence all kinds of cross border spatial interactions.

2) *The development of the land-linked transport network over time* is reflected in the evolution of the degree of integration which is used to calculate accessibility. As discussed before, a new link was constructed with new alignment and the new link became part of the road network in the year in which it was opened. Once a link became part of the network, it resulted in increasing the total network length and connectivity over time. Also as a link was upgraded in the past (e.g. from earth and gravel road to paved road, but the alignment and the network did not change) it could be said that the accessibility has been improved since it provides better services.

The development of border crossing infrastructure and land linked transport network over time resulted in *the increased traffic volume* (passengers and goods transportation volume

overtime). Thus, the interpretation of the increased traffic volume will demonstrate the growth of the land-linked integrated transport.

## 5.2 The Integrated Land Transport Networks Phases

Having examined the Lao PDR government policy and the above variables in each period, the integration level of Lao PDR development can be logically phased into four distinctive stages with specific features attributable to these stages as follows:

**Primary Phase:** After the change in government and policy system in the end of 1975, the government used the centrally planned economic system as an instrument to manage its socio-economic development. Regarding the relationship between people of Lao PDR and neighboring countries, Lao PDR closed its entire border since this was related to political policy and security. In June 1978, a trade agreement between Lao PDR and Thailand was signed and the trade relation was re-established, however with cautions and restrictions.

**Phase 2:** The country first opened up to the world in 1982. The major reforms "the New Economic Mechanism" in making decisions related to local and international market was introduced in 1986. There was structural disturbance in growth and development in the country. As Lao PDR continues to move from a "command" economy toward a more market oriented economy, from a subsistence farming economy into more diversified and commercialized ventures, international trade will continue to grow in importance. Regarding the bilateral trade between Lao PDR and Thailand, several restrictions have been relaxed, including removing many items from the lists of prohibited supplies, opening of additional trading posts and relaxing the daily limit on the value of border trade. Since 1989, there have been further reduction in trade restrictions and additional permanent crossings were opened. More items were removed from the control list. The most recent amendment of the trade agreement was made on 20 June 1991. On 19 February 1992, a trade agreement was signed between Thailand's Board of Trade of Thailand and Lao PDR Federation Industries. A Joint Trade Committee (JTC) was established on 22 May 2000. The first JTC meeting was held by Thailand during 16-17 July in Bangkok. Accordingly, an agreement on road transportation was signed on 17 August 2001. In addition Lao PDR has been given permission from Thailand for transportation of goods in transit to and from a third country.

During this time frame the government continues its efforts in both the construction of new road networks and also improvements to interregional highway conditions. At a local level most of the road networks have been expanded from the core districts within the province outward to link with other networks of the other provinces. At international level most of the road

networks have been expanded from the core districts of the main provinces, which are located at the Thai border side, such as Chanthaboury District (Vientiane Capital), Khanthaboury District (Savannakhet), Thakek District (Khammoun), Pakse District (Champasak), Xuaxai District (Bokeo) etc. to other part of the country connecting to Vietnam in the western direction, China in the northern direction and Cambodia in the Southern direction. During these periods the land transportation's integration as well as the level of accessibility and connectivity within GMS countries has increased gradually. However, in this phase border trade by ferry along/crossing Mekong was a dominant transport mode, linking with the improved land transport network within the country.

Together with open door investment policy of Lao PDR to increase the investment cooperation with Thailand, which leads to the further increased transportation of goods and passengers, resulting in both economic and urban development within the country.

**Phase 3:** The Lao-Thai "Friendship Bridge" spanning the Mekong River and linking Thanaleng (Lao PDR) to NongKhai (Thailand) opened to traffic in April 1994. It is clear that this bridge has made the transport of goods between the two countries faster and more reliable. Located at the center of an expanding regional economy, Lao PDR could also capitalize from the growth in development opportunities of its three immediate neighbors (Yunnan (China), Viet Nam and Thailand). Lao PDR faces the challenge of its integration into the global economy as long as the current move toward liberalization is not reversed or stalled. The country has been changing in a very fundamental way under the impact of various interacting forces of economic integration that are shaping GMS economic landscape.

**Phase 4:** The opening of the second bridge in 2006 at Savannakhet/Mukdahan. Savannakhet houses the National Highway route number – (NH9), which is considered as the Asian strategic highway connecting the East with the West of the region. It is stretching in an Easterly direction, from Lao PDR -Vietnam border through Vietnam to South China Sea giving access to China Hong Kong, Taiwan, Indonesia, The Philippines, Korea, Japan and North and South America. Going in a westerly direction across the new bridge at Savannakhet/Mukdahan provides access to Thailand, Myanmar, Malaysia, and Singapore and via the Andaman Sea to India, Africa, Middle East and Europe.



# PHASE I

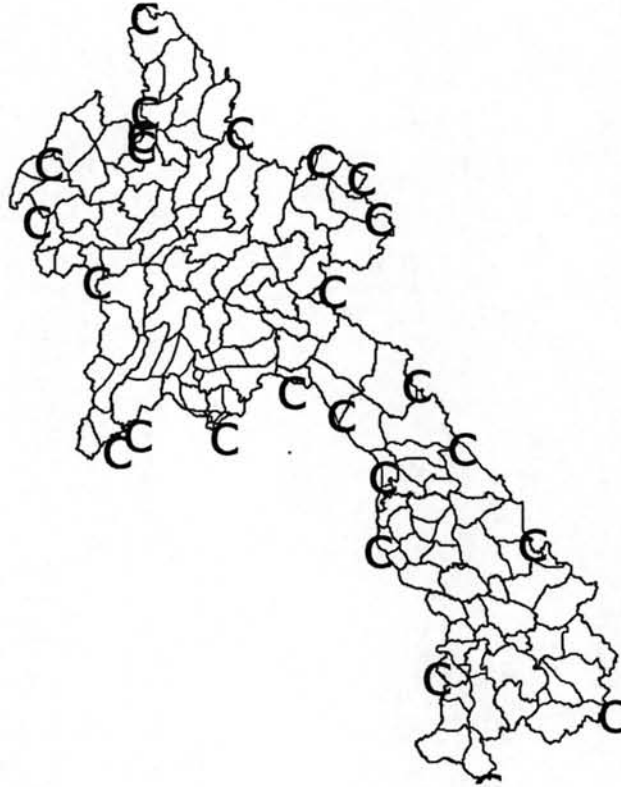


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  - P.LOUANGNAMTHA
  - P.LOUANGPHRABANG
  - P.ODOMXAI
  - P.PHONGSALI
  - P.SARAVAN
  - P.SAVANNAKHET
  - P.VIENTIANE
  - P.XAIGNABOURI
  - P.XEKONG
  - P.XIANGKHOUANG
  - S.R.XAISOMBOUN
  - VIENTIANE MUN.



Source: Author's Compilation

## PHASE II



200000 0 200000 400000 Miles

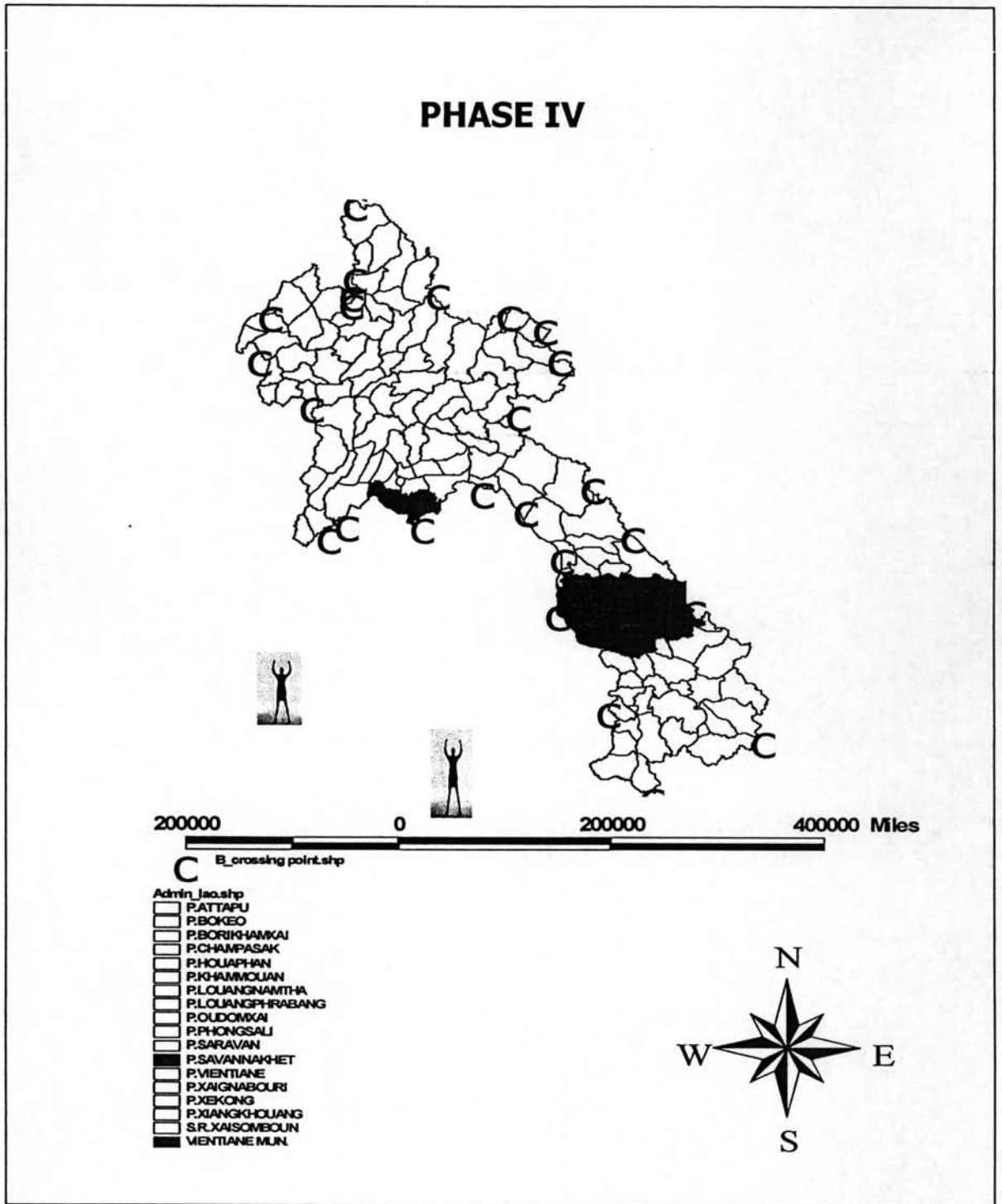
C B\_crossing point.shp

- Admin\_1ao.shp
- P.ATTAPU
  - P.BOKEO
  - P.BORIKHAMKAI
  - P.CHAMPASAK
  - P.HOUAPHAN
  - P.KHAMMOUAN
  - P.LOUANGNAMTHA
  - P.LOUANGPHRABANG
  - P.ODOMXAI
  - P.PHONGSAI
  - P.SARAVAN
  - P.SAVANNAKHET
  - P.VIENTIANE
  - P.XAIGNABOURI
  - P.XEKONG
  - P.XIANGKHOUANG
  - S.R.XAISOMBOUN
  - VIENTIANE MUN.

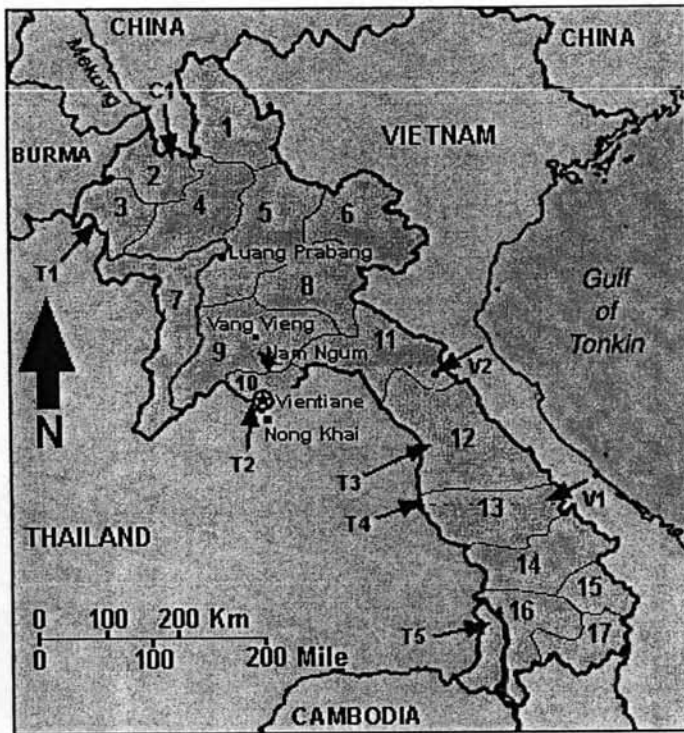


Source: Author's Compilation





Source: Author's Compilation



#### Provinces of Laos

1. Phongsaly
2. Luangnamtha
3. Bokeo
4. Oudomxay
5. Luangprabang
6. Huaphanh
7. Xayabury
8. Xiengkhuang
9. Vientiane Province
10. Vientiane Capital
11. Borikhamxay
12. Khammouane
13. Savannakhet
14. Saravan
15. Sekong
16. Champasak
17. Attapeu

Figure 3.7 Provinces of Laos & Land Border Entry Points

#### Land Border Entry Points

C1 : Boten - Bohan in China

T1 : Huayxai - Xieng Khong in Thailand via river ferry

T2 : Vientiane - Nong Khai in Thailand via Friendship Bridge.

T3 : Thakek - Nakhon Phanom in Thailand via river ferry

T4 : Savannakhet - Mukdaharn in Thailand via Second International Bridge

T5 : Vangtau - Chong Mek in Thailand via road

V1 : Ban Savan - Lao Bao in Vietnam via road

V2 : Ban Thao or Keo Nua - Kao Theo in Vietnam via road

Source: Ministry of Communication, Transport Post and Construction, Lao PDR. (2005)

## 6 Summary

This chapter provided the background of the Lao PDR, a sole land locked country in South East Asia. However, Lao PDR has seen the situation as an inland country as advantage as it becomes a full economic partner among GMS countries.

During the past three decades Lao PDR Government has been continuing its efforts in integrating the country itself into the world economy. By having observed the historical patterns of the development path of the Lao PDR regarding the Lao PDR's government policy on the regional co-operation in each time frame, the results are now shown together with the major variables describing the degree of integration of Lao PDR to the international community.

*Improvement of the cross border facilities and the development of the land-linked transport network over time* are the main variables reflected in the evolution of the degree of integration. The integration level of Lao PDR development can be logically phased into four distinctive stages called "The Integrated Land Transport Networks Phases" with specific features attributable to these stages.

"The Integrated Land Transport Networks Phases" approach mentioned above could be useful in analyzing the evolution of the transport network and its impact in each time frame.