ASEAN AND THAILAND ROAD FREIGHT NETWORKS TOWARDS THE ASEAN ECONOMIC INTEGRATION

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Abstract

Due to Thailand's geographical advantage as it is located at the center of mainland ASEAN, several prospects of Thailand becoming a logistics hub of ASEAN in the realization of the ASEAN Economic Integration in 2015 have been broadly discussed by both Thai government and private sectors. In this respect, with more than a hundred thousand kilometers of road networks across the country, the road freight transport can be considered as the most crucial mean of transportation modes in Thailand logistics industry.

This paper reviews the current road freight networks of ASEAN and Thailand, as well as their road networks development plans and strategies. In addition, the current statuses of those plans are discussed in this paper. As the realization of the ASEAN Economic Integration is approaching, it is anticipated that the freight flows within region will be immensely increased and the study of Thailand's logistics potential in ASEAN will become progressively significance.

Keywords:

ASEAN, AEC, Thailand Road Freight Transport, Road Freight Networks

1. Introduction

As the ASEAN Economic Integration will come to realize in 2015, Thai government sectors have been campaigning and launching development strategies to encourage Thailand to be the logistics hub of ASEAN. Since the proclamation of the ASEAN Economic Community, the study of Thai logistics industry has immensely increased as Thailand's geographical advantage has been significantly emphasized. The study in this paper is anticipated to provide an overview of ASEAN and Thailand road freight networks, as well as their development plans and strategies, along with the current situations of road freight transport in Thailand.

The authors, therefore, gather information of road freight transport networks in ASEAN including related information from various sources such as journal articles, and web pages, both in formal and informal formats of data.

2. ASEAN Road Freight Transport Networks

ASEAN Highway Networks

In September 1999, the ASEAN Transport Ministers (ATM) signed the Ministerial in the development of the ASEAN Highway Network (AHN) project during the fifth ATM's meeting in Hanoi, Vietnam. The AHN project contains 23 designated routes which cover the distance of 38,400 kilometers (Master Plan on ASEAN Connectivity, pg.11, 2011) in the envision that The member states shall aim to emphasize on improving operational efficiency equally and focus on utilizing the existing road infrastructure at the optimum level through better management.

During the year 2004 and 2008, half of the AHN' roads, covering the distance of approximately 11,000 kilometers, were upgraded to at least minimum standard or class III standard. Yet, there remains 8 percent of the road network that has not been upgraded to below class III. All of the CLMV countries except Cambodia still have 'below class III[1]' road standard. Cambodia had below class III standard roads of 140.1 kilometers but later had been upgraded to at least class III. Indonesia is also among countries which still need upgrading in road networks, there had been zero upgrade from 2004 to 2008. Myanmar has much scope for improvement of its road network as it has 2,791 kilometers of below standard road networks.

Prior to the standards of the AHN, ASEAN Highway standards are in fact based on Asian Highway Standards. Primary class' access is controlled and shall be used exclusively by automobiles. Access to Motorway shall be done at graded-separated interchanges[2] only (www.Aseansec.org). It is prohibited for motorcycles, bicycles and pedestrians to access to the motorway due to traffic safety reasons. At-grade intersections shall not be designed on motorway, and carriageway shall be divided by median strip.

The AHN is the sub-highway routes of Asian Highway Network. Due to geographical diversity, The AHN does not establish linkages with the ASEAN countries equally. Philippines, with its geographical location surrounded by the sea, results in no land connectivity with other ASEAN countries and no highway linkages with other AMS. Indonesia, which has approximately 17,508 islands (The CIA World Factbook) is under development plan of plan of bridge construction in which a feasibility study on bridging archipelagic countries and mainland ASEAN is assented to be conducted by 2015. Thailand is located at the center of mainland ASEAN and has 13 AHN

[1] For below class III road sections, It requires that they should be at first upgraded to meet Class III standards to be encouraged to further development (www.Aseansec.org)

[2] Grade-separated intersections or Grade-separated interchanges refer to the various means of significantly increasing the capacity or resolving physical constraints by grade-separating the through movements on two intersecting roadways and interconnecting the two with ramps or roadways that form one or more intersections (Leisch, 1993)

linkages with neighboring countries including Lao PDR, Myanmar, Cambodia, and Malaysia, the highest linkages among AMS (ASEAN Strategic Transport Plan 2011-2015, 2010, pg.3-8)

Transit Transport Routes (TTR)

TTR are designated routes in aim to enhance goods transportation in ASEAN. As the AEC is approaching, TTR have been anticipated to enhance implementation of AFTA and promote the regional economies integration. Asides from the total of 21,206 kilometers coverage of standard class TTR, Some TTR of approximately 2,069.5 kilometers which pass through Lao PDR, Myanmar and Philippines are below class III. (ASEAN Strategic Transport Plan 2011-2015)

Economic Corridors

Asian Development Bank (ADB) has been a major propellant in ASEAN infrastructure development and establishment of ASEAN sub-regional cooperation namely the Greater Mekong Subregion (GMS), the Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT). Asides from GMS and IMT-GT, there is another existing sub-regional cooperation namely the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). The Economic Corridor is a concept proposed by the ADB which has been adopted in the 3 subregions. The economic corridor is a concept represented as a connector to link production, trade, and infrastructure within a specific geographical framework. In addition, the economic corridor is anticipated not to only to connect the centers of economic activities, it is also expected to extend the benefits from developing transport projects to remote rural areas through linkages of production activities (Ishida, Isono, 2012).

Greater Mekong Subregion (GMS) Freight Transport through the Economic Corridors

A corridor approach to subregional development was adopted in the early years after the 1992 establishment of the GMS (WIEMER, 2009). According to the initiative of economic corridor concept proposed in the 8th GMS Ministerial Meeting in Manila, 1998, the adoption of economic corridor concept indicates potential to enhance transport efficiency and optimization within the GMS. The GMS composes of 9 economic corridors namely the: Northern Economic Corridor (NEC), North-South Economic Corridor (NSEC), Northeastern Economic Corridor (NEEC), Eastern Economic Corridor (EEC), Western Economic Corridor (WEC), East-West Economic Corridor (EWEC), Central Economic Corridor (CEC), Southern Economic Corridor (SEC), Southern Coastal Sub-Corridor (SCSC). The ADB stresses on the NSEC, EWEC, and SEC as the three main corridors. The three corridors are among the most important gateways as they link ASEAN to seaports where trade facilitation can be optimized and goods can be shift of mode from waterway to roadway. In addition, they are the major gateways for conveyance of goods to South Asia, Southeast Asia, mainland China and East Asia by significantly reducing distances between major markets (ADB 1998, pp.5-6).

IMT-GT Corridors

IMT-GT, a sub-regional cooperation of the nations located in the entitled “Growth Triangle” which aims to exert on economic transformation in less developed provinces of Indonesia, Malaysia, and Thailand. There are 5 existing corridors for IMT-GT namely the:

i) Extended Songklar - Penang - Medan Corridor (ESPMC)
ii) Strait of Melaka Corridor (SOMC)
iii) Banda Aceh - Medan Pekanbaru - Pelambang (North-South Sumatra) Corridor
iv) Melaka - Dumai Corridor
v) Ranong - Phuket – Aceh Corridor
(Wong Mee Wan, 2011)

3. ASEAN Strategy in Transport Network

To upgrade and construct missing links of the AHN
For AHN, ASEAN aims to upgrade all 'below Class III' sections of the ASEAN Highway Network into at least 'Class III', with the highest priority to the 'below class III' sections of TTR. And to upgrade importance of TTR in enhancing the trade and economic growth in the AEC. The top priority is to upgrade at least class III within 2012.This will require upgrading of total road length of 1999.55 km in Lao PDR, Myanmar and Indonesia. The details are as follows:

- Lao PDR : AH12(293 km), AH 15(98 km)
- Myanmar : AH 1(781 km), AH 2(593 km),AH3(93 km)
- Indonesia : AH25(141.55 km)

The second priority is given to the implementation of the missing links and upgrading of other below Class 3' roads, which in total are 201 km and 4536.7 km respectively. Below are the details of the highway 'Other below Class 3' sections and missing links that need to be upgraded or constructed:

- Indonesia : AH150(1762.3 km),AH151(611.9 km)
- Lao PDR : AH131(96 km),AH 132(126 km)
- Myanmar : AH111(239 km),AH 112(1085 km)
- Myanmar (missing link) : AH 112(60 km),AH 123(141 km)
- Viet Nam : AH13(215.5 km by 2011),AH 132(160 km by 2012)
- Malaysia : AH 150(40 km)

Other existing 'Class II or III' that are congested can be upgraded to 'Class I' in parallel to the above sections. However, this will depend on the availability of financial and other resources in the respective country. Otherwise, these may be upgraded after the completion of the above two priority.

The AHN network between China and India is suggested to upgrade the extension, particularly sections from Hanoi via northern Lao PDR through Myanmar to the border with India, by 2015. The AHN project will facilitate trade between ASEAN and India and China which are the important trade partners of the region. It also aims to promote corridors, which will facilitate in economic development. It is thus recommended to promote EWEC by constructing a missing link in Myanmar and to promote the Mekong – India Economic Corridor (MIEC) by constructing the Mekong Bridge in Neak Loung (National road No.1 in Cambodia) and building the highway between Kanchanaburi and Dawei. Strategies with reference to the concept of multimodal

transport systems and dry ports in order to enhance intra- and extra ASEAN connectivity. Thus, it is suggested to identify and develop a network of ASEAN dry ports in accordance with existing ASEAN initiatives such as the ASEAN Highway Network.

Conduct a feasibility study on bridging archipelagic countries and mainland ASEAN by 2015
To enhance the connectivity of intra-ASEAN transport networks particularly of ASEAN mainland with the archipelagic countries such as Philippines and Indonesia. It is to improve transportation connectivity gaps between the archipelagic countries and ASEAN mainland. It is suggested to first conduct a feasibility study on bridging archipelagic countries and mainland ASEAN by 2015.

Install common road signs and the route numbering system in all designated routes with a specific priority on TTR.
Route numbering on ASEAN Highways is ongoing on certain sections. However, considering the large network, the priority for implementation are fixed with a top priority on TTR followed by other AH sections. It is suggested to accomplish the target by 2013.

The installations of "Road Signage's" are in progress. However, as stated above that considering the large AH network, the priority for installation of "Signage's" need to be prioritized with a top to Transit Transport Routes (TTR) followed by other AH sections. It is suggested to accomplish the installation of Signage's by 2015.

4. Road Freight Network Development in Thailand

Thailand has strategy plan for road infrastructure toward ASEAN's strategy that need all of ASEAN member follow the plan. Thailand is a member of any sub-region cooperation but Thailand's strategy for road infrastructure has in 2 co-operations that are GMS and IMT-GT.

Highway and Bridge along the EWEC
The development of western part of EWEC in Myanmar, namely Myawaddy – Ko Ka Riek road maintenance (18 kilometers) and construction (28.6 kilometers.) and the maintenance of the 1st Thailand – Myanmar Friendship Bridge (NESDB, 2010).

Route No.11 (Thai-Lao PDR)
The development route No.11 in Laos for 92 kilometers. Total 1,650 million baht. This road is a scenic route along Mekong River and connects Vientiane with Pak Lai town. Furthermore, the construction of road from Pak Lai town (Lao PDR) to Phudu (Uttaradit ,Thailand) covers the distance of 32 kilometers and the total investment is 718 million baht. For this strategy plan is the strategy for Chaing Mai – Vientiane Corridor, the route No.11 will enable faster transportation as it has 200 kilometers from Phudu - Vientiane and will promote economic and tourism between the Northern Thailand and Vientiane. (NESDB, 2010)

The 4th Thailand-Laos Friendship Bridge project
This project is to fulfill missing linkages of ASEAN .The project begins from 11 June 2010 and expected to be completed in December 2012. The total cost of the project is approximately 44.82

million dollars People's Republic of China and Thailand are equally respond for the expenses for the construction of the project. The bridge will link Chiang Khong in Chiang Rai (Thailand) and Houey Xay which in fact, the bridge was referred to as the Third Mekong Thailand-Laos Friendship Bridge but latter was re-designated to as the Fourth Thailand-Laos Friendship Bridge (Na Srito, Walsh, 2012). This project is another alternative route which will reduce time for transportation between China and Thailand.

Dawei (Myanmar) road link to Thailand

The project plans to build road from Dawei to Bangkok, approximately 370 kilometers are in Myanmar and approximately 160 kilometer are in Thailand, from Dawei port to Bann-Phu-Nam-Ron at Kanchanaburi. For Thailand, 4- lane road will be constructed but will be upgraded to 8 first and upgrade to 8- lane road latter.

Motorway Projects

The Department of Highways (DOH) is hosting 5 motorway projects to connect with regional of Thailand. The projects will construct 4- lane roads in which the projects are from 2007 to 2017. Details of the 5 motorway projects are as follows:

- Motorway No. 6 (Bang Pa In – Saraburi - Nakhon Ratchasima) will cover the distance of 199 kilometers. Total 52,720 million baht. There will be 2 sequent phases as follows:
- Nakorn Ratchasima - Khonkaen is constructed for 196 kilometers
- Khon kaen – Nong khai is constructed for 160 kilometers

The motorway will improve trade facilitation and will connect with Vietnam and Indochina economies corridor (Laos, Burma, China and Vietnam). The motorway passes Bang Pa In which has several industrial estates. The last phase between Khon Kaen and Nong Khai will be an important link according to the encouragement to Khon Kaen as the logistics hub of ASEAN.

The Jira-Khon Kaen Dual Track Line

The Jira-Khon Kaen dual track line will cover 10 districts in 2 provinces including Nakorn Ratchasima and Khon Kaen comprising of 19 stations. The Jira-Khon Kaen dual track has the total distance of 187 kilometers. The construction of the Jiira-Khon Kaen along with the container yards development, will be expected to reduce travel time from one and a half hours and increase efficiency of goods transport from 400,000 tons per year to 4,000,000 tons per year. It will also be the intersection of goods transport between the Northeastern and neighboring countries such as Lao PDR and Vietnam. The Jira-Khon Kaen will be an important linkage of the Northeastern Thailand transport network. The project will be one of the propellants for Thailand to be the transport hub of ASEAN (Office of Transport and Traffic Policy Planning) (OTP).

Hatyai-Sadao Intercity Motorway (FS)

Hatyai-Sadao Motorway at Songkhla will be constructed for 47.2 kilometers. The study of its feasibility is being conducted and budget preparation for construction detail within May 2013.

For the second phase in 2013-2014, there will be further conclusion on whether the second phase of the project will be government ownership or public private partnership (PPP).

Nathawee - Bangpakrob Road
The project has total length of approximately 34 kilometers and has 2- lane road of approximately 4 kilometers and 4-lane road of approximately 30 kilometers. The project is due by 2012. It is significance in promoting economies within the IMT-GT and strengthens the economies along the southern border of Thailand.

5. Current Situations of Road Freight Industry in Thailand

The value of Thailand logistic cost is about 1.64 trillion baht accounted for 15.2 percent of the gross domestic product (GDP) at current prices, slightly increasing from 15.1 percent of GDP 2009 (NESDB, 2011). The result is the rise up of economic. Therefore, commodity products, export products, and cost of service increase significantly.

Logistic cost structure between years 2007-2010 does not change much. The largest amount of cost is accounted by transportation; approximately 47.2 percent (776.4 billion baht) of logistic cost where inventory cost was approximately 44.0 percent (722.5 billion baht) and administration cost was 8.8 percent (145.1 billion Baht) of the total logistics cost (NESDB, 2011)

As of 2011, Thailand has 18399 logistics service providers (LSP). The trend was increasing 3.7 percent per year since 2005. Approximately, 12000 Thai LSP operate in transport-related services with market value of 459000 million baht (NESDB, 2011). In 2010, volume of domestic transportation is 507.9 million tons increase a bit from year 2009, 0.5 percent per year. Road is the most usage (82.6 percent), in land water is 9.5percent, coastal water is 5.7 percent, rail is 2.2 percent, and air is 0.02 percent.

Domestic freight transport industry in Thailand is eminently dominated by roadway (Pomlaktong, Jongwilaiwan, Theerawattanakul, Pholpanich, 2011). Approximately, truck transport accounts for as high as 82 percent of the total freight transport. The other transport modes share much smaller portion compared to roadway. As previously mentioned that Thailand other transport mode still lack of competitive advantage over roadway (Pomlaktong, Ongkittikul, 2008) as well as low market shares in multi-modal transport services result in small amount of penetrations of other transport modes. Moreover, Thailand freight transport industry is encountering number of besets such as aged fleet truck with lower load limits and lower fuel efficiency, operational inefficiency due to limited investment and low usage of Electronic Data Interchange (EDI) to facilitate shipment, delivery, and supply chain management (Pomlaktong, Jongwilaiwan, Theerawattanakul, Pholpanich, 2011).

In 2010, the volume of international freight transport is 216.8 million tons increase a bit from year 2009, 5.8 percent per year. Sea transport dominates international freight transport with 88.8 percent usage. In accordance with the Department of Business Development (DBD) (2010), Thailand has 3813 registered road freight transport operators while 135996 trucks are registered for transport co mpanies (Department of Land Transport (DLT), 2009).

For international road transport service, it is not open to competition within the region. The transport providers must be the operator which is based on the particular country. For example, the trucks operating in Malaysia must only be Malaysians where freight transport in Thailand must be operated by Thai registered truck transport operators.

With respect to the DLT (2012), ASEAN truck driving license will soon be issued due to the realization of the AEC. The ASEAN truck driving license is expected to be applicable in 2015.

6. Conclusions

This paper has provided an overview of ASEAN and Thailand road freight networks, including their development strategies towards the AEI. The current situations of Thai road freight industry have also been reviewed. Road freight networks in ASEAN are hosted by the AHN. There are several ongoing development projects in ASEAN and Thailand, which aim to enhance freight network performance within the region. On the other hand, Thailand hosts all 3 major economic corridors in ASEAN. Currently, roadway dominates freight transport in Thailand and the majority of logistics services providers in Thailand are truck operators.

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