PROCEEDINGS OF THE
INTERNATIONAL CONFERENCE ON ASEAN
LOGISTICS CONNECTIVITY:
CHALLENGES AND OPPORTUNITIES

Organized by Transportation Institute, Chulalongkorn University

July 30–31, 2013
Bangkok, Thailand
Acknowledgement

We would like to thank the speakers/authors for dedicating their valuable time and effort to deliver stimulating presentations and compose informative papers for this international conference on the ASEAN Logistics Connectivity.

Sincere appreciation also goes to Associate Prof. Anukalya Israsena Na Ayudhya for his editorial assistance in preparing the conference proceedings.

Last but not least we are particularly grateful to the ASEAN Study Center of Chulalongkorn University for generously providing financial support for this special conference.
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BACKGROUND

The Master Plan on ASEAN Connectivity (MPAC) which was officially adopted in October 2010, has called for the enhancement of intra–regional connectivity through three–pronged strategies including physical infrastructure development (physical connectivity), effective institutional arrangements (institutional connectivity) and the empowerment of people (people–to–people connectivity). The enhanced ASEAN connectivity is expected to strengthen the realization of an integrated ASEAN Community to be established in 2015.

Under the MPAC, the intra-regional freight movements and freight logistics would be significantly enhanced through the physical and institutional connectivity. The physical connectivity specifies time–phased programs for improvements of hard infrastructure in all modes of transportation, in which ASEAN member states should collectively implement to ensure efficient and reliable intra-regional transportation systems. The institutional connectivity delineates a number of transportation facilitation initiatives necessary for the operation of logistics and multimodal transportation systems designed to support the seamless movement of goods via land, maritime, and air transportation.

Although the provision of physical infrastructure and associated cross–border transportation facilitation initiatives are necessary, they are still insufficient to successfully drive the competitiveness of ASEAN. The benefits to be realized from the proposed improvements will largely depend on how well these physical assets would be employed to trigger the economic and social development of the region. Realizing the importance of developing insights on the effective employment of ASEAN logistics infrastructure to ensure the international competitiveness of the region, the Transportation Institute of Chulalongkorn University, an institute which actively engages in the transportation and logistics research in Thailand, is organizing this international conference to provide the
forum for experts inside and outside the ASEAN region to present and exchange opinion and experience on the effective utilization of transportation and logistics connectivity as well as the corresponding challenges and opportunities that the member countries will likely confront.

OBJECTIVES

1. To critically explore the potential positive and negative consequences of ASEAN logistics connectivity and to propose frameworks, mechanisms, and instruments for taking full advantage of ASEAN logistics connectivity.

2. To provide a platform for experts to present and exchange views, idea and opinion on the development of ASEAN logistics connectivity.

3. To create a network of collaboration between the ASEAN experts in the field of transport and logistics.

CONFERENCE FORMAT

The conference comprises three sessions

1. Special lecture by a keynote speaker
2. Presentation of invited academic papers
3. Panel discussion

PARTICIPANTS: 138 persons

DURATION: July 30–31, 2013

VENUE: Patumwan Princess Hotel, Bangkok, Thailand
DELIBERABLES OF THE CONFERENCE

1. In–depth knowledge and ideas useful for capitalizing on the ASEAN Logistics Connectivity.
2. Information for relevant agencies in effectively developing efficient transportation and logistics systems.
3. Formation of a network of ASEAN experts in the field of transportation and logistics.
4. Proceedings of invited presentations made available during the conference.
Program on International Conference on
ASEAN Logistics Connectivity: Challenges and Opportunities
July 30–31, 2013, at Jamjuree Ballroom, Patumwan Princess Hotel, Bangkok

July 30, 2013

08.00 – 09.00 hrs. Registration
09.00 – 09.20 hrs. Opening Ceremony
   Welcoming Address by Assoc. Prof. Sompong Sirisoponsilp, Ph.D
   Director of Transportation Institute, Chulalongkorn University
   Opening Address by Prof. Pirom Kamolratanakul, M.D.
   President of Chulalongkorn University
09.20 – 10.20 hrs. Special lecture on “Capitalizing on the ASEAN Logistics Connectivity”
   By Mr. Porametee Vimolsiri, Deputy Secretary General, Office of the
   National Economic and Social Development
10.20 – 10.35 hrs. Coffee Break
10.35 – 11.15 hrs. How Do We Benefit from Connectivity Enhancement?
   By Mr. Ikumo Isono, Economic Research Institute for ASEAN and East
   Asia (ERIA)
11.15 – 11.55 hrs. The Challenges Confronting Stakeholders under the ASEAN Logistics
   Connectivity
   By Assoc. Prof. Chackrit Duangphastra, Ph.D, Faculty of Commerce and
   Accountancy, Chulalongkorn University, Thailand
11.55 – 13.30 hrs. Lunch Break
13.30 – 14.10 hrs. The Relationship between ASEAN and the Far–East Countries under
   ASEAN Logistics Connectivity
   By Mr. Vo Tri Thanh, Ph.D, Central Institute for Economic Management, Vietman
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<td>15.45 – 16.25 hrs.</td>
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12.00 – 13.30 hrs.  Lunch Break


15.30 – 16.00 hrs.  Conclusion and closing the conference

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Opening Address by Prof. Pirom Kamolratanakul, M.D.  
(President of Chulalongkorn University)

Distinguished Guests, Ladies and Gentlemen;

It is my great pleasure and honor to greet all of you on the opening of the international conference on ASEAN logistics connectivity. On behalf of the Chulalongkorn University, I would like to extend my cordial welcome to all speakers and participants of the conference.

Chulalongkorn University is well aware of the importance of the establishment of the ASEAN Community to the long-term prosperity of the people of Southeast Asia. Over the last few years, Chulalongkorn University, with the tireless effort of our faculty members, researchers, staff, and students, has launched a variety of campaigns designed to raise awareness and understanding of the issues and challenges we will face in realizing the vision of an integrated ASEAN community. For example, our most recent major event was the CHULA ASEAN Week, hosted by the ASEAN Studies Center of Chulalongkorn University during 15th – 21st July 2013, which was aimed at encouraging academics and the general public to improve their understanding of the opportunities and challenges that the ASEAN community brings.

The ASEAN Community is comprised of three pillars – the ASEAN Political-Security Community, the ASEAN Economic Community and the ASEAN Socio-Cultural Community. As the member nations are committed to try and create this ASEAN Community by 2015, only about two years from now, and given that a well-connected ASEAN is essential to achieving the community objective of continued economic growth, it is appropriate that we look today with a critical eye toward the proposed initiatives and strategies that will make the Community a reality and allow us to experience the benefits.

Let’s talk a little bit about what connectivity really means and how the discussion between stakeholders and the public on these issues has proceeded so far. Connectivity in the ASEAN context refers to connecting ASEAN member countries through enhanced physical infrastructure development (or physical connectivity), effective institutional
arrangements (or institutional connectivity) and empowered people (or people-to-people connectivity). These three areas of connectivity comprise the foundational means for achieving the economic, political-security and socio-cultural pillar objectives of the ASEAN Community. Logistics connectivity is the element of the planned physical connectivity that encompasses the development of hard infrastructure as well as the institutional framework and regulatory ‘software.’ The completion of logistics connectivity improvements will create efficient logistics and multimodal transportation systems for the seamless movement of passengers and goods within and across countries, which will facilitate better people-to-people contact and remove unnecessary trade-related costs.

While earlier discussions on ASEAN logistics connectivity revolved mostly around the agenda related to the formation of the physical infrastructure and regulatory components, our conference is organized with a different agenda. Our conference programs are instead designed to stimulate discussion on the likely impacts of ASEAN logistics connectivity on the myriad aspects of social and economic development in the region. We are looking forward to insightful presentations by experts over the course of our two days that will offer novel perspectives on the opportunities and challenges that improving ASEAN logistics connectivity brings. We hope for this conference to be a stepping stone for much more formal and informal discussion and investigation into the strategic and economic implications of ASEAN logistics connectivity. Such discussion and inquiries will allow us to accumulate the knowledge necessary to enhance the ability of all ASEAN member states to make the best use of ASEAN logistics connectivity – and ultimately to positively contribute to the well-being of all ASEAN citizens.

I wish all of you a productive and successful conference, and for our overseas visitors,

I hope you will have a pleasant stay in our beloved country.

Thank you everyone for sharing this special event with us.
SPECIAL LECTURE
ASEAN Member Countries’ Preparations for ASEAN Logistics Connectivity

Dr. Porametee Vimolsiri
Deputy Secretary-General
Office of the Nation Economic and Social Development Board (NESDB), Thailand

Distinguished participants, ladies and gentlemen,

Sorry I am late, now here I am and I apologize for switching your program. But the ASEAN Community and especially ASEAN Connectivity and all of the related topics are now very popular issues in Thailand.

For my session, I will address some of the challenges and opportunities for logistics connectivity for the ASEAN Community, as well as share some Thai experiences in planning our projects as part of the initiatives. As part of our preparations everyone here probably knows this by heart – the ASEAN Community will comprise 3 pillars and have a master plan on connectivity as the key element that will support the creation of a true community in our region. Connectivity is the most important element and is completely necessary to create a single market and single production base. Of course, it also serves to bring people together and in many other ways useful for bringing together a community.

Preparation for the ASEAN Community is a huge challenge to create this connectivity, as connectivity for ASEAN involves three main aspects: physical connectivity, institutional connectivity, and people to people contact. The master plan of ASEAN Community lays out many important elements that will be necessary to fulfill these 3 aspects of community. The first challenge I think is quite a big one – physical connectivity. To increase potential economic opportunities in the community we need a good physical infrastructure network. In Thailand’s experience with sub-regional cooperation, we have worked on land transport connectivity for almost 20 years. From this experience we certainly believe that connectivity, once finished and the realized, clearly results in increased trade and investment and also bringing people together. But this flagship of physical connectivity in ASEAN will involve many challenging tasks.
In terms of land transport, there are two flagships - one is the completion of the ASEAN Highway Network and the other is the completion of rail connectivity, namely the Singapore-Kunming Rail Link. For the completion of the ASEAN Highway, the main objective is to upgrade the road standard for the network to the Class III, and to improve some key parts of the network to Class I before 2020. There are still a lot of missing links in the network – a 227 km. missing link remains in Myanmar and more than 5,300 km. in Laos, Vietnam, the Philippines, and Indonesia where the quality is still below the Class III standard. So this objective will require major investment and all of the member countries will have to try to improve this road connectivity together to create an efficient and practical land transport network. In the past, as part of our sub-regional cooperation in the greater Mekong sub-region, we have spent more than 10 years trying to develop the route from Kunming to Bangkok, and Danang to Mawlamyine. So I think this wider network will be a serious challenge. But we have to make it possible.

For rail connectivity, consider that we are now talking about a region which covers a wide area, and also that currently we are facing high energy prices. In the future, many countries will look at rail as one of the most efficient modes of transport because you can move cargo more cost efficiently than by road given the high energy prices. For the regional master plan, I think having a route which can transport people and cargos from Singapore to Kunming is in the plan. This poses a challenge in terms of land connectivity and also we must consider the overall strategy. The Singapore – Kunming rail link flagship project will link Singapore, Thailand, Malaysia, Cambodia, Laos, and Vietnam to China, as well as some of the line from Thailand to Myanmar, and Thailand to Laos. In terms of the present condition of the rail network, we still have 4,059 km. of missing links in 6 member countries, so we have to seriously address the efforts to build the rail network in the future.

Maritime and port infrastructure is also important for maritime transport which may be one of most important modes of transportation in terms of traffic volume and international trade in ASEAN. This will also link ASEAN to the region beyond and to the global marketplace. So the improvement of the ports will create linkages for multimodal transport that will be important in term of increased maritime and overall connectivity.
Other objectives that will facilitate multimodal transport will include many other facilities, for example in the customs areas or the distribution centers at the ports, are key elements of maritime transport will link everything together that we cannot overlook.

Another network for connectivity may receive less attention or highlight in public, but also very important especially in this new era of globalization and information technology is ICT Infrastructure. Member countries aim to invest and build the ICT network, especially push technology for work, and to provide broadband connectivity for the community. There is no question this facility will create a lot of opportunity for trade, investment, and commerce as well as people to people contact. But the big challenge is that there is a very wide gap and digital divide among (and even within) member countries. I think the digital divide requires, apart from physical investment on connectivity, other aspects that will need to be improved, such as the software, or the institutions such as regulators or organizations that will handle international original connections in terms of the ICT service.

Another important connectivity area is the energy area. The plan aims to build the ASEAN Power Grid and Trans-ASEAN Gas Pipeline. At this stage many countries have lots of untapped potential and more supply than demand, while other countries have strong demand and insufficient supply capacity, so I think energy connectivity can help the region better utilize resources to benefit all member countries; improved connectivity will also provide safeguards in case of regional crises or emergencies. So the electricity and gas supply that can be transferred in times of emergency will contribute toward energy security for individual countries as well as for the overall region.

A major challenge will be building the physical infrastructure. This will require a lot of financial resources in terms of investment. In our experience of sub-regional cooperation within the GMS, after the road construction is finished then we realized that road management institutions, or ‘soft’ infrastructure accompanying hard infrastructure, is very important. In order to fully utilize the road network, we must coordinate the different customs and regulations practices at the different borders to minimize time and costs; the benefit can be a reduction of time and logistics costs by up to 30% according to some studies. So the ‘soft’ side of these connectivity enhancement investments will be a very
important additional challenge, although it may not require as much money as the hard infrastructure. Despite all of the talking about connectivity and community the member countries continue to act as individual countries in terms of protecting their borders. So we need to gradually try to cooperate more in terms of rules and regulations and soft infrastructure, to try and create a better return on our physical connectivity investments. This include some of the efforts which we have to streamline customs procedures, reduce the time of services, and also to reduce some of the non-tariff barriers that are inefficient at borders. This sensitive issue in some cases requires a strong effort to look beyond individual countries and cooperate together to fulfill the dream of a community.

In this area, one major objective is the National Single Window. In the case of Thailand we have to coordinate 27 agencies to come together, sharing an IT platform and coordinating procedures to provide the National Single Window. We still are having problems trying to coordinate implementation, and the problems we experience may also be experienced by other countries so we can share and exchange best practices on how to face these issues.

The plan to address people to people connectivity is also very important. People will understand each other better, come together, and live together more harmoniously if these efforts are successful. Because of time limitations I will not go over this area, and leave it to questions for discussion if you interested.

In Thailand, apart from sub-regional connectivity efforts as part of sub-regional cooperation initiatives, we have to prepare Logistic Development Plans which will hopefully prepare Thailand to be ready for serving and utilizing ASEAN Connectivity. We have to prepare the 1st Plan covering 2007-2011 right now, on 2nd stage Development Plans to cover 2013-2020. For the 1st Plan we have address primary issues similar to the ASEAN Connectivity Plan. We address some physical connectivity aspects, from road to rail, and some of the ‘soft’ aspects in terms of reducing the time of services and number of paper documents. In the 2nd stage we go deeper in the areas of business and people – for example, we look at how to optimize logistics services in terms of the total cost of logistics to a country. A large share cost affects people and business behavior. So we look at the logistics industry, logistics community, as well as operators in all industries in the country and how they can reduce costs and prepare logistic strategies for themselves. Such an
assessment is important if you want to reduce logistics cost substantially. The 2nd Plan is deeper and more focused on how to promote the role of the agro industry. For example, how farmers as part of the value chain can better utilize the logistics network. Identifying ways to promote and strengthen the competitiveness of the supply chain and strengthen supply chain management for every business is a key initiative, as well as promoting the logistics industry.

In Thailand, in term of physical connectivity, although we have invested quite a lot in the past in this area we had recently slowed down quite a bit. Now, however, we are reinvesting in physical infrastructure. We have to prepare investment plans to improve our system over the next 20 years to build new and better infrastructure with a total investment cost of 66.670 million USD. In terms of financing these improvements, it will come from domestic funds and lending from the government. This plan involves a lot of rail-focused projects, at 83% or 55 million USD, which will be devoted to rail improvements and the development of new type services.

The major new type of rail service will be the high speed train. This is under detailed study by the Ministry of Transport, and would link Bangkok to the border in the north and the north-eastern border to the south. The intent is one day to connect Singapore, Malaysia, China, Laos, and Thailand by high speed train. But for Thailand, the 1st phase high speed train we hope to build will connect major cities in the north, northeast, and south will be half way or more than half way in border.

The second rail improvement area is the improvement of existing rail, of which we have around 4,000 kilometers currently around the country. We will build dual track in some of the congested routes as well as improve the condition of the track. These improvement will help both in terms of improved safety and speed. Once these improvements are complete, utilization of the rail mode for people transport and cargo transport will increase.

We will continue to also invest in motorways as I mention as these are very important for facilitating transport especially at the border connections. There are nine important border gateway areas around the country at which we hope to improve customs facilitation and the supporting freight and passenger terminal facilities. These investments are together with or included in the major investment package related to the border.
The extension of Suvarnabhumi Airport is now operating almost in excess of full capacity as well as the improvements to the second Bangkok airport, Don Muang.

The extension of the Leam Chabang Port, to invest in new parts to increase the capacity, is now underway as part of the bordering investment plan.

In Thailand we have prepare development plans which address the logistics sector in the country, and these investment plans we hope to start to invest next year and be fully carried out within 7 years.

Some of these challenges may be interesting to address and discuss for example in terms of the ASEAN Community, once we reach 2015 and start from there to create more opportunities for trade and investment. New forms of connectivity and new form of trade and investment may emerge, but how will local business react and be ready for that? Both logistics businesses and other businesses will face serious challenges and need to prepare now, especially small and medium size ones.

For logistic businesses, this connectivity will reduce barriers and increase trade facilitation which will change the landscape of business in the future. So logistics service providers will also face much larger potential markets, and increased foreign ownership in logistics services will also be introduced. This will bring challenges in regional production and supply chain management. A single, large market brings about the relocation and expansion of production bases to achieve cost effectiveness. We have seen now some of Thai industry players plan or even start to invest in connecting improving their supply chain within this region. The challenge is in terms of potential increased logistics-market competition. Logistics-sector companies will have a greater number of domestic and foreign logistic service providers to choose from, and those companies will be in competition for labor and professional services as well. Some the local logistics providers may be threatened by outsourcing competition. The National Single Window, once realized, will also create the opportunity for more demand and more utilization of logistics service.
The opportunity for logistic businesses in the ASEAN community will be that an increased market size will increase the number of logistics-related activities. ASEAN logistics entrepreneurs will embrace this change in the competitive environment and will take the opportunity to develop capacity and abilities to compete for the larger market. Some small and medium-size logistics provider may benefit from the linkages if they can utilize large size foreign logistics providers to provide services. Overall, the logistics industry will clearly undergo significant change that will underlie the new connectivity of the ASEAN community.

In conclusion, we need to prepare for both the challenges and opportunities that will arise as a result of the ASEAN community, in order to mitigate the negative effect and maximize the positive effects. In terms of logistics development in Thailand, we hope logistics providers can develop the level of international standard and professional competency to compete in the new environment, as this will enhance the overall competitiveness of Thailand as a whole and especially the target production sectors. I hope this information will be useful for you. Thank you very much.
How Do We Benefit from Connectivity Enhancement?
An ERIA Study

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Abstract: East Asia formed sophisticated international production networks in the early 1990s and after the severe currency crisis in 1997/1998. Asian factories churned out millions of different consumer products with world-beating price-quality ratios by sourcing millions of different parts and components from plants spread across a dozen nations in East Asia. In order to grasp the complicated nature of East Asia, examine changes in its behavior, and identify proper actions to enhance connectivity, we need better economic models that can accurately describe the economic mechanisms and capture the important economic activities in the region. In this paper we introduce our Geographical Simulation Model (GSM) and show a Dawei project scenario as a sample simulation to explain how we will benefit from connectivity enhancement and how the model can identify the benefits. The GSM clearly shows that the Dawei project has significant additional benefits for the whole Mekong region, and points out the importance of international cooperation.
1. INTRODUCTION

Physical and institutional connectivity enhancement in ASEAN and East Asia is a key driving force toward deepening economic integration in the region and maintaining status of the region as a growth center for the world economy. The increased connectivity will also help the region achieve the narrowing of the development gap(s).

The Dawei project\(^1\) and ASEAN-India connectivity initiatives have been noted as promising schemes for development. ERIA (2009) proposed the Mekong-India Economic Corridor (MIEC) and analyzed the possible impact of the development of the corridor (see Figure 1). The Comprehensive Asia Development Plan (ERIA, 2010) compared the economic impacts of the North-South Economic Corridor, the East-West Economic Corridor and the MIEC initiatives and concluded that the MIEC offers the largest potential contribution to regional economic growth. The missing links between Dawei and the Maesamee pass (Phu Nam Ron) were designated as a prioritized project for ASEAN Connectivity by ASEAN in 2010 (ASEAN 2010). The Comprehensive Asia Development Plan Phase II project highlighted several potential links in ASEAN-India Connectivity, including the MIEC and the Trilateral Highways (Kimura and Umezaki, 2011). All studies showed that Dawei and Myanmar were the weakest links in the high potential corridors. There has, however, still been a long delay in the implementation of the proposed projects, including the Dawei deep sea project, the Dawei Special Economic Zone (SEZ) project and the road construction connecting the projects to Thailand.

\(^1\) The Foreign Ministers of Thailand and Myanmar agreed on a Memorandum of Understanding (MoU) on the implementation of the Dawei deep sea port and industrial estate in May 2008 followed by another MoU between the Italian-Thai Development Company (ITD) and the Myanmar Port Authority in June 2008. Thailand and Myanmar agreed to sign an agreement to establish a special purpose vehicle (SPV) to manage the Dawei deep-sea port and its special economic zone in May 2013.
The situation is now dramatically changing as Myanmar proceeds with large scale government reforms. On 19 June 2012, President Thein Sein declared that the government had entered into the second phase of reforms, which focused on economic and financial development. In January 2013, the Myanmar government held a donor meeting. The international community has shown changes in its attitude toward Myanmar, and now strongly expects that the development of the country will be accelerated, especially in the Yangon and Thilawa areas.

Under these circumstances, three research questions should be posed. First, in an era of reforms in Myanmar, is the Dawei project still needed, especially when many donors/investors are focusing on the Yangon and Thilawa area? Second, if so, how does the Dawei project benefit Myanmar and the Mekong region? And third, what are the best combination of the projects for ASEAN and Myanmar, in accordance with the objectives of high economic growth and narrowing development gaps?

We try to give answers to these questions by using the geographical simulation analysis as in previous studies. The Geographical Simulation Model (IDE/ERIA-GSM), which was jointly developed by Institute of Developing Economies, Japan External Trade Organization (IDE-JETRO) and ERIA, is the only methodology to identify the economic impacts of a specific infrastructure project on other countries, and favorable combinations of various hard and soft infrastructure projects to pursue both higher economic growth and
narrowing development gaps (Kumagai and Isono, 2011). Our model has sub-national economic data and different modes of transport in logistics, i.e., highways, railways, sea shipment and air shipment. The geographical route of transactions between each pair of regions is determined by firms’ modal choice, which is based on the type of goods transported. The model also includes estimations of some other trade costs such as tariff rates, non-tariff barriers and transshipment costs. We estimate region-specific productivity parameters by industry. Therefore, our simulation model is comprehensive in examining the impact of developing infrastructures and reducing broadly-defined trade costs.

2. SCENARIOS

In this simulation analysis, we present a baseline scenario and several alternative scenarios. Every simulation starts from 2005. In 2010, we assume that some infrastructure projects have been completed and apply their impact to all scenarios. In the baseline scenario, we assume that there are no additional hard and soft infrastructure projects and run the simulation forward to 2030. In the alternative scenario, we assume additional projects and then run the simulation up to 2030. We compare the economic situations, e.g. regional GDP (GRDP), between the baseline scenario and the alternative scenario and estimate the economic impact of those infrastructure projects as the difference between the two scenarios.

Specifically, we set three alternative scenarios as follows:

**Scenario 1: Reforming Myanmar and Yangon Development**

In 2015, we expand the capacity of Thilawa port and develop the Yangon Special Economic Zone (SEZ), thus increasing the productivity parameter of Yangon. We assume that Thilawa and Chennai, India, Thilawa and Kolkata, India, and Thilawa and Colombo, Sri Lanka are connected by sea routes that are equivalent to other routes between internationally important ports. Aside from the Yangon development, we assume that Myanmar as a country reduces policy and cultural barriers by 2% per year.
Scenario 2: Bi-Polar Development & Domestic Connectivity Enhancement in Myanmar, excluding Dawei

In addition to the developments mentioned in Scenario 1, we incorporate Mandalay development and overall connectivity enhancement in Myanmar. We reduce the time and monetary costs at the following national borders: Tachileik-Mae Sai, Mongla-Daluo, Tamu-Moreh, Kawthoung-Ranong, Myawaddy-Mae Sot, and Muse-Ruili. Connectivity enhancement includes upgrading the roads in the following sequence:

1) Yangon-Mandalay
2) Muse-Mandalay-Kyaukphyu,
3) Myawaddy-Paan-Yangon,
4) Yangon-Mandalay second link on the western side of Bago Yoma,
5) Mandalay-Monywa-Tamu,
6) Yangon-Pathein,
7) Mongla-Kyinetone-Tachileik and
8) Mawlamyine-Dawei-Myeik-Kawthoung.

Scenario 3: Scenario 2 + Dawei Development

In addition to the development mentioned in Scenarios 1 and 2, we incorporate the development / completion of the Dawei deep sea port and the Dawei SEZ in 2020. Dawei and Kanchanaburi are connected by a road. Dawei and Chennai, India, Dawei and Kolkata, India, and Dawei and Colombo, Sri Lanka are connected by sea routes that are equivalent to other routes between internationally important ports. Special customs facilitation enables products from Thailand, Laos, Cambodia and other countries to be exported to India or the EU to go via Kanchanaburi to Dawei very smoothly, taking only 15 minutes and free-of-charge, and vice versa for the imports.

3. SIMULATION RESULTS

Figure 2 illustrates the economic impacts of Scenario 1 and Scenario 2, and Figure 3 shows the economic impacts of Scenario 3, compared with the baseline (where there are no
infrastructure developments). The economic effects are measured as ‘impact density,’ which is an index of gains/losses of GRDP in 2030 between the baseline scenario and the alternative scenario(s) divided by the area of the region. The larger the impact, or the smaller the area of a region, the larger the absolute value of the impact density of the region becomes. Red regions have positive economic impacts, where the additional infrastructure projects are favorable for the regions, and blue regions have negative economic impacts due to the outflow of industries/households or fierce price competition.  

Scenario 1 depicts the plan as it stands presently on-going, as of 2013, that Myanmar will proceed with all-around reforms. The simulation result of Scenario 1 shows that reforming Myanmar and completing the Yangon/Thilawa development will stimulate the economic activity of Yangon and the Irrawaddy delta areas, and those areas will attract firms from other regions, especially from Northern Myanmar, to Yangon. The hard and soft infrastructure development in Scenario 1 significantly increases Myanmar’s net GDP. The impacts on other countries are relatively small because of the small economic size of Myanmar.

However, according to the simulation, the Yangon development and Myanmar reforms generally will induce the formation of a cluster in Yangon and lead to an outflow of firms/households from northern areas of the country (to Yangon). The result implies that the Yangon development and Myanmar reforms will lead to a higher level of economic growth in Myanmar, but not enough to achieve the narrowing of development gaps. Therefore, in Scenario 2, we propose the strategy by ERIA (2012)3 that includes Mandalay development in 2015, gradual connectivity enhancement throughout the country, and border facilitations at the main border crossings with surrounding countries, in order to achieve high economic growth and inclusive development in Myanmar.

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2 Readers should be reminded that blue regions have smaller GRDP than the baseline scenario in 2030 and that this does not mean that they will have smaller GRDP than the current values.

3 The strategy is one of the core components of the Myanmar Comprehensive Development Vision (MCDV). The MCDV was referred to in the 3rd Mekong-Japan Summit on 18 November 2011 to be implemented using the Japan-ASEAN Integration Fund (JAIF) and is expected to make an important contribution to the enhancement of intra-Mekong and ASEAN Connectivity.
Scenario 3 is where we add the Dawei development, plus border facilitation with Thailand, to Scenarios 1 and 2. The result shows that these projects will bring significant positive impacts not only to Myanmar but also for the Mekong region, the Malay Peninsula, Northeast India and Bangladesh.

Figure 3. Economic Impacts of Scenario 3
(Impact Density, USD per square kilometer, 2030)

4. POLICY IMPLICATIONS

The simulation analysis clearly shows the different characteristics of the three major projects, i.e., the Yangon development, domestic connectivity enhancement, and the Dawei development, in two key ways. The first difference is the development period. Some of the Yangon development can be implemented by 2015, while the total completion of the domestic corridors and the Dawei development will require significantly longer time to complete. The second difference is the beneficiaries. The Yangon development and reforming of Myanmar definitely benefit Myanmar, but the main beneficiary is the Yangon area. Domestic connectivity enhancement contributes to further economic growth of the country, as well as more inclusive development in Myanmar, avoiding excessive agglomeration and congestion in Yangon area. The Dawei Project contributes to promoting inclusive development in Myanmar and high economic growth of the region as a whole. In sum, Myanmar and East Asia can achieve high economic growth and work to narrow
development gaps through the delivery of the Yangon and Mandalay developments, reforms in Myanmar, domestic corridor projects, and the Dawei project.

In particular, the simulation indicates a strong policy impact of the Dawei project, suggesting that it is vital to further development of the Mekong region, notwithstanding the current reforms in Myanmar. Based on this research there should be international or regional cooperation to help Myanmar execute the Dawei project, because the economic impact of the Dawei project will prevail not only in Myanmar but throughout East Asia. There also should be the highest level of border facilitation possible between Dawei and Kanchanaburi, so that trucks belonging to Thai logistics companies are able to come directly to the port at Dawei.

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ASEAN Challenges Confronting Stakeholders under
ASEAN Logistics Connectivity

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Abstract: ASEAN logistics connectivity will be strengthened by building on physical,
institutional, and person-to-person connectivity to reduce business transaction costs, the
time and cost of travel, and to connect the core and the periphery in ASEAN. Prioritized
logistics connectivity projects in the ASEAN master plan mainly involve transport
infrastructure development, streamlining customs and trade procedures, and the
operationalization of the ratified regional transport agreements. Major challenges
confronting this enhanced connectivity as viewed by business, trade associations and
academic stakeholders include how to manage obligations and measures set out in the
roadmap under limited resources in an efficient and timely manner, how to accelerate
integration in sub-regional platforms, and how to increase supply chain cooperation
between the government and business sectors, especially small and medium enterprises, to
ensure the sustainability of the region’s logistics connectivity.

1. INTRODUCTION

ASEAN connectivity is a key area of cooperation that is crucial to the integration of the
social, cultural, political, and economic dimensions of the ASEAN union. ASEAN is a
region of 600 million people, with a GDP of US$ 1.5 trillion, and total trade of US$ 1.7
trillion. Connectivity is necessary to facilitate the integration of the region and to establish
a functional ASEAN community.
According to the Master Plan on ASEAN Connectivity (MPAC), connectivity in the ASEAN context refers to the physical, institutional and person-to-person linkages that will provide the platform to achieve the economic, political-security and socio-cultural objectives that are the pillars of the ASEAN Community by 2015. In more detail, physical connectivity encompasses transport, information and communications technology, and energy; institutional connectivity encompasses trade and economic objectives such as trade and investment liberalization and facilitation, mutual recognition arrangements and capacity building programs, and a rise in overall investment. Person-to-person connectivity includes areas such as tourism, education and cultural awareness.

There is also a strong positive relationship between increased connectivity and the capacity for community-building in ASEAN. Community-building will be strengthened by building on physical and institutional connectivity, which will in turn reduce business transaction costs as well as the time and cost of travel, and ultimately serve to connect the core and periphery in ASEAN. A more connected ASEAN will help promote a more people-oriented ASEAN and enhance the unity of the ASEAN community. However, a number of concerns have been raised regarding the impact of connectivity measures, budget and resource requirements, and how these initiatives will be achieved in the targeted timeline.

2. ELEMENTS OF LOGISTICS AND THE INTERNATIONAL EXPERIENCE

International trade is facilitated by logistics services providing efficient, integrated management of supply and distribution chains. Logistics infrastructure and services are an integral part of the competitiveness of countries and economies, particularly in light of greater globalization in trading systems and the global economy. Logistics suppliers manage the supply chain process by planning, implementing, and controlling the efficient and effective point-to-point flow and storage of goods services and related information. They do this throughout the production, distribution and delivery stages, from the initial suppliers of inputs to the final customers of products.

Logistics forms an integral part of this infrastructure and is a major determining factor of the competitiveness of an economy and its place in global trade and investment. Efficient logistics services are beneficial to both domestic and international trade in goods and
services, and crucial to the economic development of countries or regions, particularly those in earlier stages of development. Total logistics costs (including packaging, storage, transport, inventory management, and administration) are estimated to reach up to 20 percent of production costs in developed countries, while freight costs alone can be up to 40 percent of export values for certain landlocked developing countries.

Theoretically, logistics operations cover two types of flows: (a) physical flows and (b) information flows (and sometimes this may also include financial flows). Operations related to physical flows refer to the movement of goods, and operations related to information flows refer to any other operation.

Figure 1 illustrates the basic elements of logistics. The model focuses on the customer’s perspective, from the point of initial supply through to the end user. The objective is to deliver superior value at the lowest cost. This capacity depends upon building strong customer partnerships, often tailoring client-specific solutions, and on continual innovation and supply chain systems integration.

Businesses are ever-more dependent on logistics, as efficient logistics infrastructure and services create value for companies and assist in delivering improved profits. The application of individual elements of logistics varies across continents. Modern logistics is generally a newer concept in ASEAN, which has traditionally focused on basic transport improvements of road, rail, air and sea transport. Additional elements of transport logistics theoretically include other components such as warehousing management, inventory management, order processing, and freight information tracking and tracing management.
Prior to assessing how logistics in ASEAN could move from its current stage of development, it is appropriate to consider the development of the logistics sector in other global regions.

**Europe**

The development of a single pan-European market remains a major influencing factor in driving a more efficient logistics sector. This has, and continues to, place pressure on traditional domestic logistics players to decide whether they can be a pan-European operator, or whether they would like to carve out a product or service niche on a local level. This dynamic has led to industry consolidation in Europe, where smaller-sized operators have been acquired by regional and global operators to fill in a capability gap or serve an unmet or under-covered geographical area.

Another major influence has been increasing competition, as the prospect of postal liberalization in Europe has sparked expansion by domestic monopolies to become international service providers pursuing major growth. This is also in response to customer demands for increased geographical reach, a greater level of service capabilities, and technology that integrates with their systems.

E-commerce, as a critical element in logistics management, although still in its infancy, is expected to generate growth. This environment has led to those companies wishing to survive having to reinvent themselves from pure trucking into IT-intensive logistics providers. For those operators that have been able to make this transition, the transformation has been rewarded by improved profits and increased market share.

**North America**

The growth in logistics as a specialist activity has been based on the strong presence of third-party logistics providers (3PLs); that is, specialist logistics providers. 3PLs have been able to integrate warehousing and transportation activities. They were able to do so by using systems and initiatives such as dynamic route planning. This offered considerable benefits to customers in terms of providing a seamless, end-to-end service and managing
inventory. This integration has now developed to the point that a customer base located in different geographical areas can be sustained.

In the context of providing an integrated service, the management of information has become as important as the management of the operating processes, as suppliers seek to reduce inventory and provide flexibility in supply chains to their customers. This creates value for their customers through cost reductions and facilitates increased market penetration.

This has required the development of customer specific solution based on a deep understanding of customer behavior from the point of initial supply right through to the end user. Consequently, predicting and managing customer behavior, together with providing integrated technology solutions, are capabilities that are differentiating logistics suppliers in North America.

**Australia**

Companies continue to use outsourcing as a means of enabling logistics to create value. This has led to a rationalization of suppliers as customers aim to standardize processes and initiate actions to more effectively manage suppliers. Customers continue to require innovation, and demand lower costs, and this requires traditionally-managed transport companies to move from an operational focus to demonstrating how they can add value to the overall logistics process. This has required major investment to develop innovative solutions and upgrade technology and equipment. Providers are also challenged to respond to customers’ requirements to manage inventory as a key means of reducing costs within their businesses.

This is resulting in increased competition, intensifying from 3PLs and international forwarders who have built relationships at a global and regional level and whose customers require a presence in Australia. International postal companies from the Netherlands and Germany have acquired logistics operations, and major shipping companies continue to invest so as to vertically integrate from shipping into broader logistics solutions. This
environment and the withdrawal from some sectors by traditional major players have resulted in a re-ordering of the Australian market.

ASEAN

The growth of the economies in ASEAN continues to progress and logistics is high on the agenda of both the public and private sector. For the public sector, many governments have introduced a range of development schemes to improve the capacity and efficiency of national transport and logistics systems. For the private sector, companies use logistics as a mechanism to pursue market penetration and cost reductions, and to enhance their competitive advantage in their markets. Parts of many logistics development schemes are currently supported by the various ASEAN transport ministers, finance ministers, communications ministers, industry ministers, and economic ministers.

The introduction of modern logistics techniques in ASEAN has generally been done by those MNCs in manufacturing and retailing. These companies have utilized modern logistics techniques to deal with the high levels of growth and a more demanding customer base. In many respects, the state of 3PLs in many ASEAN countries resembles the situation in the North America and Europe over the past ten years. There are viable small and mid-size logistics service providers, and niche players that serve specific customer bases and maintain good relationships with local customers. Also, there are several multinationals – the “global giants,” established as the larger players.

Acknowledging lessons learned in the more liberalized services and trade economies of Europe and North America, the liberalization of logistics services outsourcing may generate a series of acquisitions and mergers of business activities across the value chain by the larger players to strengthen their competitive position and enhance revenue streams in targeted markets. This could potentially also enable these firms to become the most global / regional LSPs without having to worry about regulatory constraints requiring them to source products and services from a limited choice of local partners. Most local firms would then perceive it difficult to compete.
In the ASEAN region, multinational corporations (MNCs), with their global production chains, require sophisticated logistics support, ranging from a high level of reliability in delivery and minimal transit times, to tight security for high-value goods and other specialized requirements such as cold-storage capability during distribution. (See Figure 2.) ASEAN public and private sector players should ensure that the logistics system can build the capacity to keep up with these evolving demands. In addition, with the liberalization of trade in goods and services and the AEC scheme to relax tariff and non tariff barriers, goods exporters will be exposed to more trade opportunities that will increasingly cause them to outsource parts of (or even their entire) value chain of activities that are not core elements of their business to LSPs. This may stimulate a move towards liberalization of the logistics services sector to take advantage of growing demand.

**Figure 2. Example of Multinational Logistics Services Providers Seeking to Enter the ASEAN Market to Serve the Sophisticated Needs of their Multinational Clients**

| Airlines          | • Air France – KLM Group  
|                   | • Lufthansa Group        
|                   | • Japan Airlines         
|                   | • British Airways        
|                   | • Singapore Airlines     
| Freight & Parcel Delivery | • Deutsche Post (DHL) 
|                   | • UPS                    
|                   | • FEDEX                  
|                   | • Nippon Express         
|                   | • TNT                    
| 3rd Party Logistics / Outsourced Logistics Management | • Davids Distribution 
|                   | • DHL                    
|                   | • EXEL Logistics         
|                   | • FEDEX                  
|                   | • Kerry Logistics        
|                   | • Linfox Logistics       
|                   | • NOL / APL              
|                   | • Schenker               
|                   | • TNT Logistics          
|                   | • Toll Logistics         
|                   | • UPS                    
| Logistics IT      | • AP Moller Maersk Group 
|                   | • Evergreen              
|                   | • NYK                    
|                   | • COSCO                  
|                   | • NOL / APL              
|                   | • Mitsui OSK             
|                   | • OOCL                   
| Packaging & Pallet | • Chep                   
|                   | • Losham                 
| Logistics Infrastructure | • Hutchison Whampoa 
|                   | • Kepple Corporation     

**Top Global Logistics Companies Seek Expanding Global Operations in ASEAN to Capture Trade Growth & Serve Sophisticated Logistics Requirements of Their MNC Clients**

**Top MNC Clients Located in ASEAN**

**Automotive:** BMW, Ford, General Motor, Honda, Isuzu, Toyota  
**Electronic:** General Electric, Hewlett – Packard, Hitachi, IBM, Philips Electronics, Matsushita Electric, Samsung, Sony  
**Machinery & Equipment:** ABB, Alcatel, Siemens  
**Food:** Coca-Cola, Nestle  
**Retail:** Carrefour, Royal Ahold, Tesco  
**Chemical:** Bayer AG, Dow Chemical, Du Pont, GlaxoSmithKline, Johnson & Johnson, Novartis, Roche  
**Diversified:** Mitsui, Mitsubishi, Procter & Gamble, Unilever

The modern logistics era in ASEAN economies has led to companies choosing to relocate manufacturing bases and redefine what products are sourced from what countries. Companies are reviewing their traditional distribution channels, as the role of trading companies as distributors is being reassessed. Distributors have generally acted in both the
sale and physical distribution functions, but some MNCs now believe it is strategically important to manage sales directly and to utilize specialist logistics firms for distribution. This trend of logistics development has also impacted changes in government legislation with respect to foreign investment. The aftermath of the global financial crisis has resulted in a new wave of foreign investment, as some ASEAN counties have freed up their foreign investment legislation for some logistics-specific sub-sectors, including 3PLs and distribution centers. This was essential to meet growing customer expectations.

The following regional snapshots highlight some observations related to logistics in ASEAN:

(a) Regional logistics strategies play an important role for companies in achieving their profit targets through market growth and the lowering of total costs;
(b) Companies have outsourced logistics functions to 3PLs as a means of accelerating the take up of modern logistics techniques;
(c) Industry rationalization has occurred in most countries, both from a customer and logistics supplier perspective;
(d) In order to cope with the necessary logistics sector development, countries have had to work to improve their labor forces in terms of skills in management, information management, and other key capability areas; and
(e) Experience has indeed shown that governments can significantly influence logistics development.

3. ASEAN LOGISTICS CONNECTIVITY

The improvement of logistics services and logistics management is one of the priority areas of government and business stakeholders in the ASEAN region, and encompasses a number of committees and sub-committees engaged in addressing physical, regulatory, and person-to-person connectivity. The improvement of logistics connectivity can help reduce the time and cost of transport, as well as the development gap, and enhance the convenience and safety of the movement of goods, people, and services.

Under the master plan, ASEAN has reviewed the achievements made thus far and the challenges encountered that continue to impede each of these connectivity areas. Key
strategies have been adopted with clear targets and timelines to address these challenges to further enhance ASEAN Connectivity and achieve the ASEAN Community objectives by 2015 and beyond.

For physical connectivity, ASEAN leaders have realized the needs to be addressed in the region include the poor quality of roads and incomplete road networks, missing railway links, inadequate maritime and port infrastructure including dry ports, improving inland waterways and aviation facilities, a widening digital divide, and the growing demand for power. These issues call for the upgrading of existing infrastructure, the construction of new infrastructure and logistics facilities, the harmonization of the regulatory framework, and the nurturing of a culture of logistics innovation. Seven strategies have been drawn up, with a view toward establishing an integrated and seamless regional connectivity through a multimodal transport system, enhanced information and communications technology infrastructure, and a regional energy security framework.

For institutional or regulatory connectivity, ASEAN has reviewed the need to resolve many key issues, including impediments to the movement of vehicles, goods, services and skilled labor across borders. To achieve this, ASEAN must continue to address non-tariff barriers to facilitate intra-ASEAN trade and investment, harmonize standards and conformity assessment procedures, and operationalize key transport facilitation agreements, including the ASEAN Framework Agreement on the Facilitation of Goods in Transit (AFAFGIT), the ASEAN Framework Agreement on the Facilitation of Inter-State Transport (AFAFIST), and the ASEAN Framework Agreement on Multimodal Transport (AFAMT) to reduce the costs of movement of goods across borders. In addition, each member state must implement their respective national single window in order to realize the ASEAN single window by 2015, to further facilitate the movement of goods between and behind national borders. An ASEAN single aviation market and an ASEAN single shipping market must also be initiated to go along with AEC becoming a single market and production base.

For person-to-person connectivity, two strategies have been formulated to promote deeper intra-ASEAN social and cultural interaction and understanding: community building through the progressive relaxation of visa requirements, and the development of mutual
recognition arrangements (MRA) to enable concerted efforts in promoting awareness, collaboration, and advocacy programs to facilitate greater interaction between the people of ASEAN.

Regarding logistics connectivity, the master plan identified priority projects which will have high and immediate impacts on connectivity in ASEAN. Projects related to logistics connectivity include:

1) The completion of the missing links of the ASEAN Highway Network (AHN) and upgrading of Transit Transport Routes (TTRs);
2) The completion of the Singapore Kunming Rail Link (SKRL);
3) Studies on the Roll-on / roll-off (RoRo) network and short sea shipping;
4) The establishment of common rules, standards, and conformity assessment procedures;
5) Operationalizing all national single windows by 2012; and
6) Operationalizing the ASEAN Agreement on transport facilitation.

In addition, there are a number of projects related to logistics connectivity which have not yet been listed as prioritized projects by ASEAN leaders, especially those involving regulatory connectivity; however many of these have attracted significant attention from business stakeholders, trade associations, SMEs, academics, and non-transport infrastructure organizations. These comprise physical, institutional, and person-to-person connectivity projects as below.

The physical connectivity projects consist of (a) the better utilization of inland waterways transport and establishment of more efficient connections with road and rail transport modes, (b) the improvement of maritime transport connections in the 47 designated ports and adding more qualified ports in the maritime network, (c) the development of air transport facilities to cope with the growing network demand from low cost, regional carriers, and (d) the introduction of electricity and pipeline interconnections in the region.
The institutional connectivity projects are based around various international or regional agreements to facilitate international transactions of goods and services as well as the movement of persons across borders. These involve (a) the liberalization of transportation and other logistics services to allow up to 70 percent foreign company by 2013; (b) the liberalization of goods and other non-tariff barriers such as customs procedures, rules of origin, subsidies, sanitary and phytosanitary measures, and industrial technical barriers to trade; (c) the granting of immediate benefits for investment promotion and liberalization to both ASEAN investors and ASEAN-based foreign investors who have substantive business operations in the region; (d) the development of a free-flow of skills and labor and establishment of an MRA for logistics professionals and trade persons; (e) the encouragement of enterprises to develop interoperable supply chain management (SCM) systems in ASEAN to link up planning solutions, automated storage and retrieval systems and wireless tracking technologies; (f) the enhancement of the transparency of domestic regulations for logistics-related regulations; (g) the acceleration of the implementation of domestic regulations to be in-line with the ratified ASEAN framework agreements related to transport and logistics, and (h) the establishment of more regulatory free areas such as free ports, customs free zones, and special economic zones (SEZs).

Person-to-person connectivity takes into account (a) the adoption of best practices in the provision of logistics, and supporting the development of SMEs in the sector, including the formation of SME networks; (b) the development and update of an ASEAN database on logistics services providers with an aim toward enhancing the development of networking activities; (c) the development and upgrading of skills and capacity-building through joint trainings and workshops; (d) the introduction of national skills certification systems for logistics services providers; (e) the development of an ASEAN common-core curriculum for logistics management, and (f) the establishment of national and sub-regional centers of excellence.

Sub-regional cooperation networks in ASEAN include (a) the Greater Mekong Sub-Region (GMS), comprising Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam, and China; (b) the East ASEAN Growth Area (BIMP-EAGA), which consists of Brunei Darussalam, Indonesia, Malaysia, and the Philippines, and (c) the Growth Triangle (IMT-GT), including Indonesia, Malaysia and Thailand.
4. THE WAY FORWARD

Recognizing the importance and directional trend of logistics development in both a global and regional context, ASEAN members should move quickly to collectively find ways to achieve improvement in logistics services. Such an assessment must take into account linkages to the global, regional, and local marketplaces across all industries reliant on efficient logistics infrastructure and services. In conclusion are posed some questions that remain for all stakeholders with regard to improving ASEAN logistics connectivity:

- Do ASEAN governments understand the dynamics of logistics development?
- How can ASEAN manage the timeline and obligations made in the ASEAN Master Plan for Connectivity and the roadmap to achieve the outcomes and targets supporting the common vision for a fully integrated AEC by 2015?
- Is the investment in logistics infrastructure and services adequate to support growth?
- Is the regulatory environment facilitating and/or stimulating the desired outcome(s)?
- Do foreign investment regulations adequately support logistics development?
- Do the quantity and quality of local labor forces and management capacities adequately support national logistics development?
- What is the sub-sector coverage of logistics services? Which services in particular are sensitive?
- Cooperation, trust, and more operational plans and actions are important keys to managing logistics and supply chain integration, while sometimes allowing flexibility for individual country situations. Can we manage just in time development of logistics connectivity?
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ASEAN Connectivity and the Role of the Far-East Countries

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Abstract: This paper intends to provide an overview of the MPAC, and the suggested role of Far East Countries in implementing the MPAC. The impacts of MPAC can be expected to be largely positive, since better connectivity deters a wide range of at-the-border or behind-the-border restrictive measures and factors and can therefore help facilitate flows of goods, services, and persons across ASEAN. Altering the ASEAN border schemes and cost schedules will also affect the distribution of the population and the geographic location of economic industries. MPAC is thus plays a very role concept in the working agenda, covering project-based activities to improve physical connectivity, institutional connectivity, and people-to-people connectivity. The process is subject to various challenges due to the limited capacities of some ASEAN member states, relatively few or small sources of local finance, the absence of monitoring mechanisms, etc. This also presents room for a larger role for Far East countries – key partners of ASEAN in the East Asian integration process. In particular, these countries can assume significant roles in various areas, from identifying a broader framework for regional integration and cooperation in all identified areas of ASEAN connectivity, to monitoring mechanisms, and to the mobilizations of resources and mechanisms for implementation.

1. INTRODUCTION

The Master Plan on ASEAN Connectivity (MPAC) aims to connect ASEAN through enhancing connectivity in three major ways, namely: (i) physical connectivity, (ii) institutional connectivity, and (iii) people-to-people connectivity. The MPAC plays a pivotal role in achieving one of the key goals of the ASEAN 2020 Vision, which is “...
equitable economic development, and reduced poverty and socio-economic disparities.” Within this framework, the MPAC presents a series of objectives which together will work to ensure freer flows of goods, services and persons among ASEAN member countries. Accordingly, the MPAC for physical connectivity is very much project-driven.

The MPAC was adopted by ASEAN leaders in Hanoi in 2010 (ASEAN 2011). The overarching objective of the MPAC, as stated, is to “promote economic growth, narrow the development gap, enable ASEAN integration and drive the community building process, enhance the competitiveness of ASEAN, promote deeper social and cultural understanding and greater personal mobility, and connect the member states with the region and the rest of the world.” Obviously, in light of these goals, a successful implementation of the plans laid out in the MPAC would contribute immensely to the overall realization of the ASEAN Vision for 2020.

ASEAN member states have already been active for a long time in attempting to deepen regional economic integration. The scope of these integration attempts has broadened over time, from the liberalization of trade in goods and services to overall trade and investment facilitation. Therefore, ASEAN connectivity should be looked upon in the new context of trade liberalization alongside or on top of various previous progress made on regional integration. These attempts within ASEAN have increasingly been aimed at the facilitation of trade and investment activities, on reducing services-link costs, and on “behind-the-border” regulatory reforms. Asia-Pacific integration has evolved more profoundly, with drastic improvements in production network formation and management, and efforts to negotiate and/or implement ASEAN-plus FTAs, the Regional Comprehensive Economic Partnership (RCEP), and the Trans-Pacific Partnership (TPP). To add to these already dynamic and complicated movements, sub-regional cooperation has also emerged rapidly, while the East Asian development paradigm is experiencing a gradual shift toward a more balanced growth process, in what has been called a growth rebalancing process.

This paper intends to provide an overview of the MPAC and the suggested role of Far East countries (specifically China, Japan and Korea) in implementing the MPAC. The remainder of the paper is structured as follows. Section 2 will describe the possible impacts of the MPAC. Section 3 then reviews the concepts presented in the MPAC and the major
issues therein. Section 4 elaborates on the possible role of Far-East countries and, on that basis, makes some recommendations on their potential contribution to implementing the MPAC. Finally, Section 5 concludes with some remarks.

2. THE IMPACTS OF MPAC

Qualitatively, one can expect the impacts of MPAC to be largely positive. This is because better connectivity can help facilitate flows of goods, services, and persons across the ASEAN sub-regions and member states, which in turn will drive increased trade and production specialization on the basis of (both static and dynamic) comparative advantages. This impact is not new; in fact, it should be the norm in accordance with ‘traditional’ trade theory. Nonetheless, improved connectivity will deter a wide range of at-the-border or behind-the-border restrictive measures and factors, which will help realize the favorable net impact of regional trade liberalization.

The above finding is also supported by some recent empirical attempts to quantify the net impacts to sub-regions and ASEAN member states. Using the IDE Geographical Simulation Model, MPAC seems to promote ASEAN economic growth and also serve to narrow the development gap (Kumagai et al 2009). While the findings are still restricted to economic impacts, they still carry important implications for enhancing member states’ and stakeholders’ confidence in implementing the MPAC measures. For example, when sorted by region, Kota Lhokseumawe in Indonesia saw the largest potential positive economic benefits in the simulation, of almost 534%. Other regions in Indonesia followed, with increases of between 404% and 486%. Importantly, more than 254 regions will experience economic benefits of more than double their current situation, while 239 may experience an economic benefit of between 50% and 100%. By country, Myanmar emerges as the top beneficiary from improving regional connectivity, with an economic benefit of almost 146%. Vietnam ranks second, with a simulated economic benefit of 115%. As a critical observation, all member economies of ASEAN experience more benefits than their external, non-ASEAN counterparts such as China, Hong Kong and Bangladesh.
Table 1. IDE Geographical Simulation Model: An illustration

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>Economic Effects</th>
<th>Region</th>
<th>Country</th>
<th>Economic Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kota Lhokseumawe</td>
<td>Indonesia</td>
<td>533.7%</td>
<td>Myanmar</td>
<td>Myanmar</td>
<td>145.8%</td>
</tr>
<tr>
<td>Asahan</td>
<td>Indonesia</td>
<td>485.8%</td>
<td>Vietnam</td>
<td>Vietnam</td>
<td>114.6%</td>
</tr>
<tr>
<td>Mamuju Utara</td>
<td>Indonesia</td>
<td>480.8%</td>
<td>Laos</td>
<td>Laos</td>
<td>99.3%</td>
</tr>
<tr>
<td>Kota Pematang Siantar</td>
<td>Indonesia</td>
<td>463.4%</td>
<td>Thailand</td>
<td>Thailand</td>
<td>98.6%</td>
</tr>
<tr>
<td>Rokanhilir</td>
<td>Indonesia</td>
<td>432.8%</td>
<td>Cambodia</td>
<td>Cambodia</td>
<td>97.9%</td>
</tr>
<tr>
<td>Indragiri Hilir</td>
<td>Indonesia</td>
<td>419.2%</td>
<td>Indonesia</td>
<td>Indonesia</td>
<td>85.0%</td>
</tr>
<tr>
<td>Kota Binjai</td>
<td>Indonesia</td>
<td>411.4%</td>
<td>Philippines</td>
<td>Philippines</td>
<td>73.4%</td>
</tr>
<tr>
<td>Kota Kediri</td>
<td>Indonesia</td>
<td>410.3%</td>
<td>Malaysia</td>
<td>Malaysia</td>
<td>64.4%</td>
</tr>
<tr>
<td>Kota Tanjungbalai</td>
<td>Indonesia</td>
<td>408.1%</td>
<td>India</td>
<td>India</td>
<td>45.6%</td>
</tr>
<tr>
<td>Soc Trang</td>
<td>Vietnam</td>
<td>404.4%</td>
<td>Singapore</td>
<td>Singapore</td>
<td>29.2%</td>
</tr>
</tbody>
</table>

**Number of region with**

<table>
<thead>
<tr>
<th>Economic Effects</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% or more</td>
<td>254</td>
</tr>
<tr>
<td>50% to 100%</td>
<td>239</td>
</tr>
<tr>
<td>0% to 50%</td>
<td>446</td>
</tr>
</tbody>
</table>


When the freer flows of goods, services and persons is permitted and facilitated, one may then raise the question of what factors affect the location of populations and location decisions of economic industries. According to classical trade theory, comparative advantages play an important role. In addition, border costs may also have implications on the dispersion of populations and on the level of economic activity across regions. Notably, soft infrastructure constitutes a significant percentage of border costs. As an important conclusion from ERIA (2010) and Kumagai et al (2009), “border costs appear to play a big role in the allocation choice of populations and industries, and often a more important role than the physical infrastructures itself.” At the same time, nominal wage differences are also found to matter more than expected.

However, the impacts of improved connectivity within the ASEAN region are not all positive. In fact, ASEAN member economies may experience some possible negative
impacts, the extent of which depends upon the capacity and socioeconomic characteristics of the economies to enable or absorb those (potentially negative) changes. First, some non-traditional security issues could become more serious. Examples of such issues may include, but are not limited to, human-trafficking, smuggling, etc. Second, improved connectivity may present an unequal “win-win game,” where one or more participating economies will reap smaller benefits than the others. In particular, benefits can be small if transport corridors are not economic ones with positive externalities. This issue is most likely to appear when one member state has the capacity to help itself without the need to also help others. Finally, the issue of sustainability (in terms of environment, culture, or other areas) has not received serious attention in the discussions and plans.

3. THE CONCEPT OF THE MPAC AND MAJOR ISSUES / CHALLENGES

As noted above, ASEAN leaders agreed on the vision to build the ASEAN Community by 2015. As part of this vision, the leaders call for a well-connected ASEAN, which will bring people, goods, services and capital closer together, thereby developing a more integrated, competitive and resilient ASEAN. Better connectivity throughout ASEAN is essential to achieve the three aspects of the ASEAN Community, namely, the ASEAN Political-Security Community, the ASEAN Economic Community and the ASEAN Socio-Cultural Community. Thus, ASEAN leaders approved the MPAC in order to align the improvement of regional connectivity with the development vision set out for the region as a whole. Figure 1 displays the concepts of the MPAC.
With the MPAC, ASEAN has attempted to review the achievements and remaining challenges impeding connectivity within and between member countries. Key strategies and essential actions have been pursued with clear targets and roadmaps to address these challenges, serving to further enhance ASEAN Connectivity and help realise the ASEAN Community by 2015 and beyond.

Table 2. Strategy and Key Actions of MPAC

<table>
<thead>
<tr>
<th></th>
<th>Physical connectivity</th>
<th>Institutional connectivity</th>
<th>People-to-people connectivity</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Strategies</td>
<td>7</td>
<td>10</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>Key Actions</td>
<td>32</td>
<td>32</td>
<td>20</td>
<td>84</td>
</tr>
<tr>
<td>Prioritized projects</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>15</td>
</tr>
</tbody>
</table>

The MPAC thus is both a strategic document for achieving overall ASEAN Connectivity and also an action plan with items for immediate implementation to connect ASEAN through physical infrastructure development (physical connectivity), effective institutions, mechanisms and processes (institutional connectivity), and empowered people (people-to-people connectivity). This three-pronged strategy is supported by the necessary financial resources, and by coordinated institutional mechanisms. MPAC furthermore encourages the synchronization of ongoing sector-based strategies within the frameworks of ASEAN and its sub-regions. As such, MPAC comprises of a number of strategies with key actions, which will be summarized here.

For physical connectivity, the key challenges are mainly the poor quality of roads and incomplete road networks, missing railway links, inadequate maritime and port infrastructure including dry ports, inland waterways and aviation facilities, the widening of digital divide, and the growing demand for power. Accordingly, there is a need for upgrading existing infrastructure, constructing new infrastructure and logistics facilities, harmonizing the regulatory framework, and nurturing a culture of innovation. Seven strategies are formulated within the MPAC to establish integrated and seamless regional connectivity, through a multimodal transport system, enhanced information and communications technology (ICT) infrastructure, and a regional energy security framework.

The 6 major projects under physical connectivity include: (1) the completion of the missing links of the ASEAN Highway Network (AHN) and the upgrading of the Transit Transport Routes (TTRs); (2) the completion of the Singapore – Kunming Rail Link (SKRL); (3) the establishment of an ASEAN Broadband Corridor (ABC); (4) building the Melaka Pekan Baru Interconnection (IMT-GT: Indonesia); (5) building the West Kalimatan-Sarawak Interconnection (BIMP-EAGA: Indonesia); and (6) studying the roll-on/roll-off (RoRo) network and short-sea shipping options.

Regarding institutional connectivity, ASEAN needs to address the key issues impeding the movement of vehicles, goods, services and skilled labour across borders. ASEAN must further phase out non-tariff barriers to facilitate intra-ASEAN trade and investment, harmonize standards and conformity assessment procedures, and enforce key transport
facilitation agreements, to better facilitate the movement of goods across borders. At the national level, efforts by member states will be required to fully implement the National Single Window programs, which lay the foundation for the ASEAN Single Window by 2015. ASEAN countries should seek to progressively open further to investments from within and beyond the region. In these respects, ten strategies have been adopted to ease the flow of goods, services and investment in the region.

The 5 major projects under institutional connectivity include: (1) developing and operationalizing mutual recognition arrangements (MRAs) for prioritized and selected industries; (2) establishing common rules, standards and conformity assessment procedures; (3) operationalizing all National Single Windows (NSWs) by 2012; (4) providing options for a framework intended to phase out the scheduled investment restrictions/impediments; and (5) operationalizing ASEAN agreements on transport facilitation.

In addressing people-to-people connectivity, ASEAN leaders have approved two strategies to promote deeper social and cultural interactions and understanding within ASEAN. This will be done through community building efforts and greater intra-ASEAN personal mobility through the progressive relaxation of visa requirements and the development of mutual recognition arrangements (MRAs).

The 4 major projects under people-to-people connectivity include: (1) easing visa requirements for ASEAN nationals; (2) developing ASEAN Virtual Learning Resources Centers (AVLRC); (3) developing ICT skill standards; and (4) pushing the ASEAN Community Building program.

Monitoring the progress of MPAC implementation is also an important need, so as to identify issues as they arise during the rollout of the various programs and to react with the appropriate adjustments and/or policy actions. As ASEAN connectivity forms part of the broader framework for realizing the ASEAN Vision for 2020, the monitoring processes should be incorporated with the overall framework, in order to take stock the achievements and address issues that remain. The ASEAN (official) Scorecard serves as a broad framework for the purpose of stocktaking. However, this Scorecard system so far seems
unable to accurately assess MPAC implementation. In this respect, further efforts will still be required to enforce closer monitoring of MPAC implementation.

The ERIA Mid-term Review also provides an attempt to document progress and issues in implementing the ASEAN Economic Community Blueprint (ERIA 2012). Meanwhile, other ERIA-funded studies of logistics and trade facilitation are on-going, including the AEC Scorecard Phase 3 Project “Towards Informed Regulatory Conversations and an Improved Regulatory Regime: Logistics Sector and Trade Facilitation,” and the project titled “Enhancing Supply Chain Connectivity and the Competitiveness of ASEAN Agriculture Products: Identifying Chokepoints and Opportunities for Improvement.” On the basis of these projects’ findings, ASEAN leaders may consider in more depth the subsequent measures to facilitate connectivity and, ultimately, trade within the region.

To date, ASEAN has made substantial achievements in implementing AEC measures. Key examples of these achievements include tariff reductions; the implementation of NSW in 5 member states and of advanced NSW in 2 member states; the initiation of ACIA with the minimum yardstick of 70% allowable ownership by foreign equity; ASEAN-X for the integration of the Air Travel Sector (RIATS); the Chiang Mai Initiative; and a number of cooperation initiatives in agriculture, competition policy and intellectual property rights. Still, there persists a big gap between what has been actually implemented and the targets laid out at the onset. For instance, material gaps remain in the areas of trade facilitation, standards and conformance, services liberalization, MRAs on professional services and labor mobility, connectivity and transport facilitation, ICT, and energy.4

Another major issue in implementing MPAC lies in the financing of infrastructure works. Given the huge deficiency in the quality and quantity of infrastructure works in Asia and ASEAN region in general, the capital needs remain significant. The projected capital need to finance Asia’s infrastructure works from 2010-2020 is US$ 8.2 trillion (in 2008 US$). Of this, 68% is for new capacity investment and 32% for maintenance/replacement. By sector, energy needs account for 49%, transport for 35%, while ICT and water and sanitation account for 13% and 3%, respectively. For ASEAN by itself, the projected capital need is US$ 596 billion, of which 66% is for new capacity investment and 34% is

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4 See ERIA (2012) for Recommendations on the Way Forward.
for replacement/maintenance. The respective shares of energy, transport, ICT, and water and sanitation are 36%, 26%; 11%, and 27%.

It bears repeating that assessments of the impacts of MPAC are still not comprehensive enough. Even the CADP by ERIA (2010) looks only into the economic impact of some (but not all) of the various corridors on the countries in the region. To date, also, only about 70% of scheduled projects have had feasibility studies performed, which implies a long wait before, significant material progress in improving connectivity can be realized.

There are several financing sources available to support the implementation of MPAC projects. Examples of these sources include government budgets, multilateral development banks (such as the World Bank and Asia Development Bank), commercial banks, capital market initiatives such as CMI, ABMI, ABF, and the ASEAN stock market link, the ASEAN Infrastructure Fund, and sovereign wealth funds. A number of funds are also available for technical assistance (including those of China, Japan, and Korea). The utilization of these sources is not free of problems, however. First, government coordination may invite some inefficiency during the allocation and disbursement of funds. Second, project development and documentation on the part of capital-seekers may not be sufficiently aligned with the requirements of these financial sources. Third, there is also concern regarding the capacity of the ASEAN Secretariat to approach and coordinate such a wide range of financial sources. Fourth, the engagement of the private sector is preferable, yet enforceable mechanisms for public-private partnerships and the permissible level of government exposure to future risks has not been institutionalized. Finally, working with dialogue partners and multilateral development banks presents another sort of challenge, given the differences in motivation and the bargaining power of related parties (Sanchita Basu Das and James 2013).

4. ROLE OF THE FAR-EAST COUNTRIES AND RECOMMENDATIONS

China, Japan and Korea (CJK) are all members of ASEAN + 1 FTAs, RCEP, and APEC. The scopes of these agreements and/or forums all emphasize the need for infrastructure development and connectivity improvement. This is clear on an investigation of the APEC agenda 2013 and beyond, and in the Expert Roundtable for RCEP (2013). CJK have also
been important partners for ASEAN, given their involvement in a complex web of regional cooperation and stakeholders’ engagements with a number of funds/ODA and cooperation schemes. It is thus sensible that these Far East countries should not be separated from the process of improving ASEAN connectivity.

In recent years, China-ASEAN cooperation has been further deepened through the “One Axis, Two Wings” strategy, which covers Nanning-Singapore Corridor, the Greater Mekong Subregion (GMS), and “Pan-Beibu Gulf Cooperation.” Korea has also formulated and enforced a new ODA strategy, with increasing support for ASEAN in addressing connectivity-related issues. Meanwhile, Japan and ASEAN made the Joint Declaration for Enhancing ASEAN-Japan Strategic Partnership for Prospering Together (2011), and approved the Plan of Action 2011-2015. These are notable examples of how the engagement of CJK in ASEAN connectivity process has proliferated significantly.

There are a couple of important factors that may justify larger roles of the Far East countries in improving ASEAN connectivity. On one hand, CJK have huge savings and international reserves (Table 3). China is most sizable in this regard, with domestic savings of over US$3.8 trillion in 2011 and gross international reserves of almost US$3.4 trillion by the end of 2012. Japan follows, with over US$1.1 trillion of domestic savings in 2011 and US$1.3 trillion of international reserves in December 2012. The figures for Korea are more modest, but still represent relative strength compared with ASEAN as a whole. The huge savings and international reserves may allow for investment in regional connectivity improvement, with a certain level of profitability. On the other hand, CJK continue to be strongly committed to supporting ASEAN integration and connectivity. These commitments have been formalized in various ASEAN+1 FTAs, via the provision for development cooperation, and in a number of regional and/or bilateral talks and declarations.
Table 3. Gross domestic savings and international reserves of Asian countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>3,843.5</td>
<td>33,523.3</td>
</tr>
<tr>
<td>India</td>
<td>543.1</td>
<td>292.3</td>
</tr>
<tr>
<td>Japan</td>
<td>1,111.7</td>
<td>1,304.1</td>
</tr>
<tr>
<td>Korea</td>
<td>351.3</td>
<td>327.0</td>
</tr>
<tr>
<td>ASEAN-10</td>
<td>718.2</td>
<td>815.1</td>
</tr>
</tbody>
</table>

Source: Cited in Sanchita Basu Das and James (2013).

Nonetheless, there appear to be some problems even with the current engagements and support of CJK for ASEAN’s connectivity improvement. First, despite consideration and elaboration, many ongoing cooperation programs overlap and/or have not been implemented yet. Programs are also too spatially and sectorally widespread, which may lead to the dispersion of efforts and resources. This may eventually cause development cooperation programs to be less than meaningful (Joint Expert Group on EAFTA Phase II Study 2009). Second, not all of the ideas/programs in CJK-ASEAN cooperation have been incorporated into the framework of the MPAC. Thus, either some ideas/programs have not been aligned closely with the top priorities of ASEAN in improving connectivity, or strategic confidence between CJK and ASEAN has been insufficient to make way for more fruitful dialogue related to ASEAN connectivity. Finally, coordination among CJK; between CJK and other stakeholders and ASEAN remains weaker than expected, whilst lacking effective mechanisms to ensure the harmonization of their development efforts.

Having acknowledged the above motivations, potential roles, and issues for Far East countries in promoting regional connectivity, ASEAN may recommend the following for CJK in helping along the collaborative process.

First, CJK should work together with ASEAN to ensure a broader framework of East Asian integration and cooperation schemes. The institutionalized integration of East Asia cannot succeed without the strengthening of ASEAN integration. In turn, ASEAN integration cannot succeed if the development gap between member countries continues to widen.
In line with this, CJK and ASEAN should establish regular “East Asia dialogue forums” for building regional mutual trust/credibility and a new development paradigm, including the coordination of cooperation and assistance programs. Besides, the RCEP needs to “adopt the 4 core goals of AEC and implement RCEP consistently with that in the AEC”; furthermore, “RCEP could set the road map for integrating economic cooperation activities under bilateral cooperation with those under ASEAN +1 FTAs and also explore the feasibility for an East Asian Cooperation and Development Fund to facilitate the economic cooperation programme” (Expert Roundtable for RCEP 2013). This idea is not new; instead, its resurgence in recent years is consistent with the ideas for transforming the Initiative of ASEAN Integration (IAI) into the Initiative of East Asian Integration (Bui & Vo 2007).

Second, regarding institutional connectivity, CJK should continue and/or deepen support for the process of building out the AEC and implementing ASEAN connectivity, especially in developing capacity building programs for Cambodia, Lao PDR, Myanmar and Vietnam. For example, one possible approach is encouraging “the 2+1 scheme”, i.e. cooperation between 2 or more low-income countries, plus the financial and technical support from a more advanced country/an international institution.

Some mismatches may arise between the existing ASEAN commitments and those under the ASEAN+1/RCEP arrangements. Such mismatches are unavoidable, given the difference in the scope of commitments of those arrangements. To address this, several areas of ASEAN institutional connectivity need to be seen as foundations for “smoothing out” such possible mismatches. Examples of these areas may include customs procedures and NSW/ASW, transport agreements, standards and conformance, MRAs on professional services, and ICT.

Third, regarding physical connectivity, CJK may join in and indeed lead the process of improving the regional master plan for physical connectivity. This process should take into full account the connection between ASEAN and CJK, as well as the national strategies for developing infrastructure, especially the networks of national primary and secondary transportation, corridor towns, and industrial zones. China may lead the development of the North-South corridors, while a similar responsibility over the West-East corridors may be
assumed by Japan, and Korea may choose a greater focus on the secondary networks to support those corridors. CJK should all be involved in the development of sea and air transport. At the same time, the CJK – depending on their interest and capacity – may coordinate among them and extend support/assistance to the preparation of feasibility studies for all projects, which must incorporate comprehensive assessments of the socio-economic and environmental impacts.

For monitoring purposes, CJK should participate in improving (sectoral) statistics/databases and in strengthening information sharing between all parties. Along the way, a high degree of participation in assessing and monitoring the progress of regional integration/connectivity, and the reduction of development gaps (especially taking into account the interests of and costs-benefits of these actions to CLMV) by CJK should also be emphasized.

Finally, CJK needs to dedicate further resources and man-hours alongside ASEAN to mobilize resources and formulate/enforce institutions for the implementation of programs and initiatives. The existing schemes, such as ABMI, ABF, the ASEAN stock market link, the ASEAN Infrastructure Fund, and those of CJK or having CJK engagements should be improved and utilized more effectively. Another line of efforts should be to strengthen private sector engagement (in particular from ASEAN and CJK) in furthering ASEAN connectivity, using PPP mechanisms based on the combination of different financing resources – public finances and internationally acceptable standards. High Level Task Forces (HLTF) should also be established in CJK, to serve the purposes of coordination mechanisms between these institutions and the ASEAN Connectivity Coordinating Committee (ACCC) for implementing MPAC and the broader regional master plan of connectivity. Moreover, HLTFs in CJK and all ASEAN member countries need to have PPP units that link closely with ACCC. The interaction between “top-down” and “bottom up” policy processes (politicians/policy-makers - experts - business communities-people) needs to constitute actual substantive progress.
V. CONCLUDING REMARKS

The MPAC has established itself as an integral part of ASEAN integration and a building block in the process of creating an AEC that will bring substantial benefits to all member countries. Still, MPAC implementation is subject to several challenges, including sources of finance, monitoring mechanisms, etc. To help address these challenges, ASEAN can look to increase cooperation with CJK – which collectively have huge potential resources, both in financing and otherwise, and are more strongly motivated than more distant, or less-affected, partners.

The key part of this process is, however, remains “strategic trust” between countries in the region. This is being strengthened by market forces thanks to trade liberalization, integration arrangements, and connectivity enhancement. On the downside, this can also be undermined by governments that choose to impose in other countries’ affairs as a way of dealing with regional geo-political problems, without taking into account international norms and the goal of ASEAN unity. The MPAC is thus more than a simple aim; instead, its implementation may also provide a good avenue for CJK and ASEAN to make their best cooperative efforts, seeking to provide a favorable foundation for the regional community-building process.

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The Promotion of SME Development in Preparation for ASEAN Logistics Connectivity

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Abstract: Small and medium enterprises (SMEs) are the backbone of all economies of the world due to their majority of employment and personalized services. Similarly, SMEs in ASEAN are the strength of the ASEAN economies, as they account for more than 96 percent of all enterprises and constitute 50 to 95 percent of employment in many ASEAN Member States (AMSs). The purpose of this paper is to identify various successful practices in other countries that might be beneficial to emulate in promoting SME development in preparation for ASEAN logistics connectivity, and to then present the development plans for SMEs in Malaysia as a case study. The current situation of ASEAN is put forth based on data obtained from each ASEAN country, and several recommendations are then made. This study finds that different countries use different
criteria for classifying SMEs, which results in inefficient regulation and policy implementation. This paper also suggests the implementation of a ‘cluster’ approach in ASEAN, as it has proved to be successful in driving increased competitiveness among SMEs in other countries, such as Japan and Italy.

1. INTRODUCTION

Researchers and practitioners generally agree that small and medium enterprises (SMEs) are the backbone of virtually all economies of the world due to their large role in employment creation and their provision of personalized services for consumers (Obokoh, 2008; Wattanapruttipaisan, 2003). SMEs are also a strong driver for sustainable development, especially for less developed countries, due to their role in creating economic growth and eradicating poverty (Ayyagari et al, 2003). Several researchers emphasize that the development of SMEs is an essential element in the growth strategy of economies, especially in developing countries. In fact, the major economies of Asia are heavily based on SMEs, which are the primary sources of dynamism in economic development (Obokoh, 2008).

In the context of ASEAN, SMEs are similarly considered the backbone of the regional economies as they account for more than 96 percent of all enterprises, and constitute 50 to 95% of employment in ASEAN Member States (AMSs). The contribution of SMEs to GDP in these countries is also highly significant, at approximately 30-53%, and their contribution to exports is between 19-31%. They are the largest source of employment across all economic sectors in both rural and urban areas. As such, a strong, dynamic and efficient SME sector is necessary to ensure sustainable, inclusive and broad-based economic and social development. A vibrant SME sector is critical in supporting closer regional integration together with and as part of the establishment of ASEAN Economic Community (AEC) (ASEAN, 2012).

Given its size and complexity, the SME sector in ASEAN is confronted with a wide range of structural, financial and other challenges, including limited access to finance, technologies and markets. The lack of entrepreneurial spirit and management skills,
compounded with the lack of information, inadequate capacity for compliance with standards and certification, and the absence of a more conducive business and policy environment all add to the challenges. With the incoming trade liberalization measures, SMEs will suffer if proper plans and strategies are not established. This is because larger enterprises typically have their own networks that are embedded in the linkages throughout an entire supply chain, especially in the crucial area of information and communications technology (ICT) linkages. In such a challenging business environment, the ability to manage their supply chains through collaboration and partnerships with customers, suppliers, distributors, competitors, and other organizations, such as consulting firms and research centers, is becoming more critical than ever (ASEAN, 2012). In view of these challenges, this paper raises issues and challenges faced by the ASEAN SME sector. By reviewing the experiences of other developed countries, this paper will discuss the applicability of those practices in the context of ASEAN SMEs, and present a case on how Malaysia can strategically prepare their SMEs for the oncoming ASEAN logistics connectivity. Finally, this paper also provides an overview of strategies for enhancing the capability of the SMEs, using Malaysia as a case study.

2. BACKGROUND

2.1 Small and Medium Enterprises (SMEs) – Definition and Challenges

The term ‘SME’ is often used to represent a wide range of definitions and measures. It is defined differently across different countries, and reported upon differently between sources that report SME statistics. Generally, they are so classified based on a number of factors and criteria, such as company location, size, age, structure, organization, the number of employees, sales volume, value of assets, and ownership (Singh, Garg and Deshmukh, 2008; Rahman, 2001). However, according to Ayyari et al (2007), SMEs are also commonly defined as formal enterprises.

Tambunan and Sunaryanto (2004) highlight that SMEs are widely claimed as the ‘seedbed’ for larger enterprises, and thus for growth and innovation in economies. They further asserted that the number of SMEs in an economy is one basic indicator of the entrepreneurial health and competitiveness of an economy. However, since the mid-2000s,
trade liberalization and global competition have imposed several threats on SME survival. This is because the majority of SMEs utilize relatively simple systems and procedures, which allows for flexibility, immediate feedback, short decision-making, better understanding and quick responses to customer needs (typically advantages as compared to a larger organization) (Singh et al, 2008). However, in spite of this increased flexibility, pressure to improve their competitiveness in the global market is mounting. Berry (2002) emphasizes that SMEs are quite vulnerable to external shocks due to the increased liberalization of trade. The pace of technological advances, changes to traditional market structures, and evolving customer demands, as well as new or different operational requirements is forcing SMEs to significantly improve their operating procedures and overall competitiveness in many areas, including product quality and cost, business productivity, innovation, and operational procedures (Singh et al, 2008; Karaev et al, 2007).

Other research highlights other major constraints faced by SMEs in meeting these challenges, including:

- Inadequate technologies and other resources (Gunasekaran et al, 2001; Hashim and Wafa, 2002);
- The excessive cost of product development projects (Chorda et al, 2002);
- The lack of effective selling techniques and market research (Hashim and Wafa, 2002);
- An inability to meet the demand for multiple technological competencies (Muscatello et al, 2003; Narula, 2004);
- An information gap between marketing and production functions, as well as a lack of funds for implementing expensive software, such as ERP systems (Xiong et al, 2006);
- Human resource development issues (Hudson et al, 2001); and
- A lack of capabilities in the new product development (Sonia and Francisca, 2005).
As highlighted above, a major key to ensuring long-term competitiveness largely depends on a firm’s capacity to be innovative and responsive to changes in the business environment, as well as to changes in customer demand.

2.2 The Cluster Approach and Competitiveness

Over the last decade, clusters have been widely recognized as one of the ways to overcome the size limitations of SMEs as well as for improving their productivity, innovativeness and overall competitiveness (Karaev et al, 2007). Researchers typically define clusters as geographically bounded concentrations of interdependent firms, which have active channels for business transactions, dialogue and communications (Karaev et al, 2007; Rosenfeld, 1997). Karaev et al. (2007) add that clusters consist of private enterprises of various sizes, including producers, suppliers, and customers, as well as labor, government, professional associations, academics, and research or training institutes.

The United Nations Industrial Development Organization (UNIDO) (2010) defines clusters as agglomerations of interconnected companies and associated institutions. Firms in a cluster produce similar or related goods or services and are supported by a range of dedicated institutions located in spatial proximity, such as business associations or training and business development service (BDS) providers. Vibrant clusters are typically at the origin of the development of innovative firms, and bring the benefits of an integrated support system and dynamic business networks (UNIDO, 2010). The experience utilizing a cluster approach in Japan identifies two different practices, namely industrial clusters and geographical concentrated clusters (see Table 1). Table 1 provides an overview of cluster practices in Japan and Italy.
Table 1. Successful Cluster Approaches

<table>
<thead>
<tr>
<th>Countries</th>
<th>Jiba-sangyo</th>
<th>Sangyo-shuseki</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Localized industrial communities of the traditional type.</td>
<td>• Industrial agglomerations in a particular locality (geographical concentrated)</td>
</tr>
<tr>
<td></td>
<td>• SMEs link to each other as industrial clusters</td>
<td>• SME gather together in support of each other in a new industrial activity, around a large-sized enterprise as input suppliers/ academic community.</td>
</tr>
<tr>
<td>Italy</td>
<td>Traditional products</td>
<td>Technological product outputs</td>
</tr>
<tr>
<td></td>
<td>• Located at Northern Italy</td>
<td>• Located at Silicon Valley</td>
</tr>
<tr>
<td></td>
<td>• Furniture, ceramic and food</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The geographical type of cluster is more typically accepted, as compared to the industrial cluster, as it is associated with several traditional benefits. The agglomeration effects resulting from geographical proximity bring competitive advantages to SMEs such that they will gain cost advantages and have access to resources that are not available to competitors not located in the cluster (Pouder and St John, 1996). Communication between those companies located in the cluster is strengthened, and this increases the exchange of knowledge. Another apparent advantage is the reduction of transportation and communication costs, due to shorter distances, which reduces the risks of travel and transport and therefore, insurance costs. Transaction costs may also decrease, since all stakeholders in the supply chain and other related institutions are in close proximity to each other. Formal communication, through different communication media, indirectly transfers tacit (implicit) knowledge that may enhance the degree of trust between cluster members and thus foster good relationships which ultimately become an asset to clusters. Unlike
financial and physical assets, competitors would find it hard to imitate such intangible assets. Consequently, this can become a powerful source of sustainable competitive advantage (Kaplan and Norton, 2004).

SMEs can sometimes overcome the lack of advanced technology or knowledge by having access to informal communication and face-to-face contacts in clusters. Andersson et al. (2004) stress that information and communication technology (ICT) does not decrease the importance of geographically-concentrated clusters, although the age of internet-based technologies allows easy access of information. Clusters often include strategic alliances with universities, research institutes, suppliers of corporate services (brokers and consultants) and customers (Porter, 1998). Specific infrastructure could also be made available more readily in clusters, such as training institutions, communal infrastructure, telecommunications, etc.

Many successful case studies show that coordination of economic activities in the form of clusters can strengthen the competitiveness of national economies, although it very much depends on the intensity of the cooperation among members in the cluster. Cluster-based economic development has also proven highly successful in both smaller and larger European countries (Karaev et al 2007; OECD, 1997). Several studies have shown that clustering could be an efficient tool for overcoming the limitation of size that SMEs face. Geographical proximity creates agglomeration effects in terms of higher specialization, facilitation of innovation and knowledge transfers, and this results in cost reductions and improved competitiveness for industrial sectors, regions and nations.

3. BACKGROUND OF SMEs IN ASEAN

With a combined GDP of US$2.1 trillion, a wealth of natural resources, and an enterprising and increasingly well educated workforce, the AMS have the potential to become a pillar of the global economy (ASEAN Secretariat, 2012). The region’s population of 600 million people has attracted significant foreign investment and also represents a tremendous potential market. Some of the most powerful global economies have invested large sums in anticipation of these opportunities; China, for example has invested US$18.8 billion in ASEAN countries, which accounts for more than 70% of investment in the last four years.
The region also represents the European Union’s fifth largest trading partner, as trade in goods and services remains high at US$258 billion in 2011. Europe is also by far the largest investor in Southeast Asia, with its companies accounting for an average of 20.6% of Foreign Direct Investment (FDI) into the region in the past three years (ASEAN Secretariat, 2012).

Having considered the significant contribution of the SMEs to the ASEAN economies, ASEAN created the ASEAN Strategic Action Plan for SME Development (2010-2015). The process for creating the action plan included a stock-taking exercise and a review of the implementation of the ASEAN Policy Blueprint for SME Development 2004-2014 (APBSD). The mission and objective of the action plan is as follows:

**By 2015, ASEAN SMEs shall be world-class enterprises, capable of integration into the regional and global supply chains, able to take advantage of the benefits of ASEAN economic community building, and operating in a policy environment that is conducive to SME development, exports and innovation.**

To realize the vision and objective, ASEAN aims to achieve the following goals:

- Enhancing the internationalization of SMEs and SME marketing capabilities;
- Improving SME access to finance in ASEAN;
- Strengthening SME human resource development and capacity building;
- Creating incubators and encourage local SME development;
- Establishing an SME service center / ASEAN SME Service Desk;
- Setting up an ASEAN SME regional development fund.

The Strategic Plan indicates that future policies and programs should consider the specific needs and objectives of ASEAN SMEs. These include, for example, (a) SME entrepreneurship and human resource development; (b) SME capacity building in management, marketing, networking and supply chain formation, technology and financing; (c) policies designed for SMEs, including information dissemination and inter-agency coordination to enable SMEs take advantage of AFTA, AIA, PISs, AEC, etc.; and (d) public-private partnerships for SME development and networking, etc. A strategic
schedule with key activities and timelines has also been put forth. The plan covers (a) access to financing, (b) facilitation, (c) technology development, and (d) human resource development (ASEAN Secretariat, 2012).

4. IMPLEMENTING THE CLUSTER APPROACH ACROSS THE ASEAN REGION

In this section, several best practices that have been previously explained in this study are suggested for implementation in ASEAN, and the practicalities of doing so are discussed, leading to various further recommendations in the context of ASEAN.

4.1 Definition of SMEs

The data on SMEs, particularly on the size of SMEs, has been very scarce, which has led to several problems of comparability and consistency in measurement. Different countries use different criteria, such as employment, sales or investment for defining small and medium enterprises. Hence, different sources of information on SMEs use different criteria in compiling statistics; as such the definition of an SME on the basis of a specific criterion is not uniform across countries. For example, a first country may define an SME to be an enterprise with less than 500 employees, while another country may define the cut-off to be 250 employees (Ayyagari et al, 2007). In the context of ASEAN, six member countries (Malaysia, Indonesia, Philippines, Vietnam, Cambodia and Brunei) classify SMEs into three categories: micro, small and medium. If measuring the company by number of employees, micro companies have a range of 1 to 11 employees, a range of 5 to 99 employees constitutes a ‘small’ company, and 20 to 300 employees is a ‘medium’ size company (Tambunan and Sunaryanto, 2004). Tambunan and Sunaryanto (2004) highlight that some Asian countries classify SMEs according to the existing sectors of the economy. They emphasize that from the government-management point of view, such a sorting is far more useful than countries that simply apply a general definition. They claim that a more general definition creates inefficient or unspecific regulations and policies that are difficult to implement or regulate (Tambunan and Sunaryanto, 2004).
4.2 Implementing the Cluster Approach among SMEs in ASEAN

To achieve the overall objective of ASEAN becoming a single community, all AMS should work together, collaborate and effectively function as a single entity; realizing this goal would enable a powerful economic base capable of competing with other large national or supranational economic regions of the world. ASEAN could exploit its inherent strengths and offer a wide range of opportunities for internal and foreign investment and collaborations, and each AMS could choose the most relevant and appropriate for their needs and ambitions. Each country would be able to find its own niche, with nations and economies complementing each other throughout the AMS, rather than competing directly with each other. In a report by the ASEAN Secretariat in 2012-2013, for example, Razak (2013) highlights that several different hubs in the region have been established. Nine out of the world’s ten largest automotive suppliers are operating at the “Detroit of Asia” in Rayong, Thailand. Indonesia is the region’s largest producer of natural gas and the world's largest producer of palm oil and natural rubber. Malaysia, which is known as the global center for Islamic finance and the Iskandar Malaysia corridor (located at the border with Singapore), offering a brand new urban and industrial cluster. The new economic frontier, Myanmar, a country rich with natural resources, is providing a gateway and linkages for ASEAN to two mega-economies, China and India. The Philippines, Vietnam, Cambodia and Lao PDR also offer great potential (see Table 2). Through this general scheme, all member countries should be able to market their products to the 600 million ASEAN population and also other parts of Asia and global markets (Razak, 2013).

As can be seen in Table 2 ASEAN is abundant with natural resources. For example, 80% of AMS have the resource of oil and gas, and 90% possess timber. Through collaboration, such products could become the major export for ASEAN.
Table 2. Summary of Natural Resources of the ASEAN Countries

<table>
<thead>
<tr>
<th>Natural resources</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil and gas</td>
<td>All AMS except Singapore</td>
</tr>
<tr>
<td>Timber</td>
<td>All AMS except Singapore</td>
</tr>
<tr>
<td>Hydropower potential</td>
<td>Cambodia, Lao PDR, Myanmar, Vietnam</td>
</tr>
<tr>
<td>Tin</td>
<td>Indonesia, Lao PDR, Myanmar, Thailand</td>
</tr>
<tr>
<td>Mineral resources</td>
<td>Myanmar, The Philippines, Thailand, Vietnam</td>
</tr>
<tr>
<td>Gold, silver, gemstone</td>
<td>Indonesia, Lao PDR, Myanmar, The Philippines</td>
</tr>
</tbody>
</table>


A few other countries have similar resources. For example Cambodia, Lao PDR, Myanmar and Vietnam each have the potential for hydropower development, while Indonesia, Lao PDR, Myanmar and Thailand have abundant tin supplies. The development of a network of companies, based on shared industrial knowledge and expertise would be beneficial to developing competency in ASEAN companies, and thus building greater capacity to compete with larger companies, especially those from the outside the ASEAN region. However, the companies in the network should remain free from any opportunistic behaviors, as research has indicated that opportunism is the major hindrance of the development of good business relationship networks (Williamson, 1975, 1985).

Table 3 contains a summary of the major exports of ASEAN countries. It shows a similar picture: that ASEAN is a major exporter of oil and gas as well as garments, clothing and textiles. The other main export of ASEAN is timber and wood, and electrical appliances, as the shows that 60-70% of AMS are major exporters of these products.

Table 3: Summary of Major Exports of the ASEAN Countries

<table>
<thead>
<tr>
<th>Major exports</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil and gas</td>
<td>All AMS except Thailand and Cambodia</td>
</tr>
<tr>
<td>Garments/Clothing/Textiles</td>
<td>All AMS except Singapore</td>
</tr>
<tr>
<td>Wood/Timber/Plywood</td>
<td>Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Vietnam</td>
</tr>
<tr>
<td>Electrical appliances</td>
<td>Indonesia, Malaysia, The Philippines, Singapore, Thailand, Vietnam</td>
</tr>
<tr>
<td>Rubber</td>
<td>Cambodia, Indonesia, Malaysia, Thailand</td>
</tr>
<tr>
<td>Fishery/Marine products</td>
<td>Brunei, Myanmar, Thailand, Vietnam</td>
</tr>
</tbody>
</table>

Source: Investing in ASEAN 2012/2013
As elaborated upon in Section 2.2, clusters may help address the problems that size limitations impose on SMEs, as well as improve the productivity, innovativeness and overall competitiveness of SMEs (Karaev et al., 2007). ASEAN SMEs may adopt the cluster approach as practiced in Japan, i.e. industrial clusters and geographically concentrated clusters. For resources that are inherently scattered, industrial clusters seem best suited for adoption. A partnership of oil and gas or timber companies could be developed so that a larger firm could be established, which would have the capacity to compete with larger foreign companies. On the other hand, the geographically concentrated cluster approach may be more suitable for manufactured products such as wood products, electrical appliances, etc. With the agreement of product manufacturing companies in the same industries across ASEAN countries, several strategic trading hubs for particular products could be established. The logistics service providers (LSPs) could then specialize in carrying out certain products and in such a larger volume environment each supply chain could become specialized in the products of that industry.

ASEAN currently is comprised of developing and less developed countries. Thus, they may have limitations in terms of financial capabilities, expertise in trading complexity, and/or high technology in manufacturing products or extracting/utilizing the abundant natural resources. However, all AMS should aspire to be innovative in developing, manufacturing and trading, so that the richness of the natural resources collectively possessed by AMS may be realized. Numerous by-products could be created from the utilization of natural resources and knowledge sharing by member countries. The Chair Triangle, in the Northern Italy, has grown to produce 80% of total Italian chair products and 50% of production for all of Europe. ASEAN could imitate this strategy and implement geographically concentrated clusters, where private enterprises of various sizes, including producers, suppliers, and customers, as well as labor, government, professional associations, and academic, research or training institutes gather to realize the benefits of an integrated support system and dynamic business network. Concurrently, better infrastructure could be built out, to allow the efficient movement of goods and better connectivity overall.
4.3 Cross-cultural Trade and Diversity

The challenges that impede these potentialities are mostly based on the region’s diversity and cross-cultural trade situation. This is because of the basic reality that ASEAN is comprised of ten member nations that are spread across Southeast Asia, and the variety of government styles that currently manage these countries and economies creates obvious integration challenges. Indeed there are presently there are three constitutional monarchies, three republics, two communist states, one constitutional sultanate and a former military junta in ASEAN. The people of ASEAN practice several religions and speak over 70 languages and dialects; Malaysia and Singapore, as examples, are among the most multi-racial countries in the world (Razak, 2013). Thus, respect and understanding of various religions, cultures and languages is a necessary ingredient for the successful integration of AMS. Since the current focus of logistics connectivity has been mostly directed to the physical aspect of connectivity, i.e. physical infrastructure, research on the intangible aspects of the integration must be recognized as equally important.

5. MASTERPLAN ON ASEAN CONNECTIVITY

In order to achieve the aspiration to realize the single community by 2015, the Master Plan on ASEAN Connectivity was created. The idea behind it is to enhance physical, institutional and people-to-people linkages between nations and the region as a whole. This Master Plan is expected to direct the initiatives that will accelerate economic growth, reduce the development gap, and improve connectivity between AMS and outside the region. In this context, connectivity in ASEAN refers to the physical, institutional and people-to-people linkages that comprise the foundational support and facilitative means to achieve the economic, political-security and socio-cultural pillars necessary for an integrated ASEAN Community. The key elements of ASEAN Connectivity therefore include: (1) physical connectivity (transport, information and communications technology, and energy); (2) institutional connectivity (trade liberalization and facilitation, investment and services liberalization and facilitation, mutual recognition agreements/arrangements, regional transport agreements, cross-border procedures, and capacity building programs); and (3) people-people connectivity (education and cultural awareness and tourism).
6. CAPABILITY ENHANCEMENT OF MALAYSIAN SMEs TO TAKE ADVANTAGE OF ASEAN LOGISTICS CONNECTIVITY

As in other ASEAN countries, SMEs in Malaysia are facing a series of challenges at present. The uncertainties and increased competition that globalization has produced have required more strategic plans for SME development. SMEs are a key component critical to transforming the Malaysian economy, as they are the catalyst of domestic economic growth and the foundation of private sector activities. The success and stability of the nation’s SMEs is critically significant for stimulating innovation and also for stabilizing economic development during periods of economic turbulence.

Currently, SMEs in Malaysia constitute 99.2% of total business establishments in the country. The 2010 Statistics show that SMEs contribute 32% of total GDP, 59% of employment and 19% of exports. Considering this significance for the overall economy, it is necessary to ensure that in the longer term, the SME sector will be able to enhance productivity, foster competition and create and sustain greater linkages with larger firms. The need to support certain sub-sectors where SMEs are fragmented, with initiatives to promote capacity building and strengthen SME’s capacity to benefit from economies of scale generate greater efficiency and increase product differentiation, is thus critical.

6.1 SME Master Plan 2012-2020 – Catalyzing Growth and Income

To address these challenges and in order to accelerate the growth of SMEs, the SME Master Plan 2012-2020 has been developed. It is intended to become the ‘game changer’ to accelerate the growth of SMEs, with the aim of to achieving the ‘high income nation’ status by 2020. To do that, it will be important to understand the forces that drive the performance of SMEs – namely, innovation and technology adoption, human capital development, access to financing, market access, the legal and regulatory environment, and infrastructure. Figure 1 details these factors.
These forces are identified in the Master Plan as the performance levers that need to be enhanced to address the challenges faced by the SMEs, to fully unleash the growth potential of SMEs. The Master Plan adopts a two-pronged approach to address these challenges. A differentiated strategy will be adopted to suit the needs of all SMEs, ranging from microenterprises to more sophisticated firms. There are also generic measures to develop a comprehensive range of assistance for microenterprises, designed to bring them into the larger economy and ultimately grow their contribution to growth. The plan also proposes a targeted approach to promote innovative and high growth companies to harness their full potential and integrate into the global market. The Master Plan comprises five elements: vision, goals, focus areas, the action plan, and institutional support. Each of the goals has specific targets that need to be met in order to achieve the macro targets for SME contribution to GDP, employment and exports by 2020. The summary of these goals and targets of the SME Master Plan are shown in Table 4.
### Table 4: Summary of Goals and Targets of the SME Masterplan

<table>
<thead>
<tr>
<th>Goals</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase business formation</td>
<td>An average annual increase from 2.4% between 2005-2011 to 6% between 2012-2020</td>
</tr>
<tr>
<td>Expand number of high growth and innovative firms</td>
<td>Average annual increase of 10% in high growth and innovative firms</td>
</tr>
<tr>
<td>Raise productivity</td>
<td>An increase of each worker’s productivity from RM47,000 in 2010 to RM91,000 in 2010</td>
</tr>
<tr>
<td>Intensify formalization</td>
<td>A decrease of GNI from 31% in 2000 to 15% in 2020</td>
</tr>
</tbody>
</table>


Accordingly, the services sector has been identified to be a future growth driver for the economy, as it is targeted to account for 65% of GDP by 2020. SMEs must build up capacity and capability to face the challenges from liberalization, and at the same time, must aim to leverage emerging opportunities in the marketplace. To help firms do this, 11 National Key Economic Areas (NKEAs) under the Economic Transformation Programme have been identified. They are (1) agriculture, (2) electrical and electronics, (3) healthcare, (4) communication content and infrastructure, (5) education, (6) palm oil, (7) wholesale and retail, (8) tourism, (9) financial services, (10) business services, and (11) oil, gas and energy. The emphasis is to expose SMEs to the growth potential of these industries, and allow them to exploit their competitive advantage and focus on those areas with a high multiplier effect. A total of 131 Entry Point Projects (EPP) have been allocated under the NKEAs, of which, an estimated 60% are expected to benefit SMEs across all economic sectors. Presently, SMEs are predominantly concentrated at the back-end of the value chain in the NKEAs, particularly in the low and medium value-added activities, although a few companies are in the category of ‘sophisticated’ SMEs, due to their presence in high-value added activities, mostly in the services sectors. The macroeconomic reforms and initiatives under the SME Master Plan are expected to accelerate the adjustment of activities towards the higher end of the value chain. SMEs should venture into medium-to-high value-added activities under each of the NKEAs. Thus, the SME Master Plan is expected to encourage the recalibration of activities towards higher value-added activities, reflected by the new growth opportunities for the SMEs (National SME Development Council, 2012).
6. CONCLUSION

The regional integration promoted by AEC will lead to a single market and production base in ASEAN and greater integration for the region into the global economy. The AEC agenda will not only bring opportunities for new and existing businesses, but the member nations will enjoy greater economies of scale and flows of trade, investment and people. There will also be tremendous opportunities in several large infrastructure projects as the ASEAN Connectivity Master Plan is increasingly realized, with road, rail, power and shipping becoming more integrated across the region. With the proper development plan for SMEs in ASEAN, efficient logistics connectivity may be achieved. For Malaysia, national policies have been designed in order for Malaysia to exploit the advantages presented by ASEAN, chiefly through NKEAs. The SME Master Plan should serve as a tool to raise productivity amongst SMEs, as all sectors move up the value chain and explore more value-creating activities that could generate rapid growth and utilize higher-skilled labor. In moving up the value chain, SMEs should move toward more value-creating activities that are globally competitive; this could be implemented through innovation-driven activities, supported by investments in human and physical capital.

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Transformation from Landlocked to Land–linked Country

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Abstract: The objective of this research is to assess the current logistics situation in the GMS, ASEAN countries, and Laos PDR, and to analyze the changing role of Lao PDR from a landlocked country to a land-linked country. Lao PDR will link its neighbors as a key component of the North-South and East-West economic corridors of the GMS road network and this paper will further explore the associated benefits of these new linkages. As a literature review, this paper considers previous research papers and some professional reports on these subjects. To date, Laos PDR has suffered in terms of social and economic development as a result of being landlocked and having only limited infrastructure delivery. In view of this, the Lao PDR government has initiated a policy directive aimed at capitalizing on its geographic situation – turning land-locked into “land-linked.” The strategy is to develop infrastructure to serve as a key link between countries in the GMS and ASEAN networks, in tandem with those organizations’ effort to boost regional and sub-regional infrastructural linkages, and ultimately, to use this development as a means for helping realize the 2020 vision for the country of leaving the list of ‘lesser developed countries’ (LDC) and general poverty-reduction initiatives. The main themes of the
strategic initiatives are the importance of infrastructure development, and a concerted logistics development strategy and framework, particularly in the road/transport sector.

1. INTRODUCTION

Laos PDR is located at the center of Greater Mekong Sub-region (GMS), with road access to all of the surrounding GMS countries: China, Vietnam, Cambodia, Thailand and Myanmar. This central location provides Laos PDR with favorable strategic advantages to transform itself from a “landlocked” to a “land-linked” country, particularly in light of globalization in trade and transport, and regional economic integration. In this respect, Laos PDR possesses a great opportunity to become a regional logistics hub for the GMS and ASEAN region.

There have been several recent changes and further upcoming ones, in terms of international trade and the logistics sectors in Southeast Asia which will greatly facilitate the movement of people and goods, and promote investment within ASEAN and the Greater Mekong Sub-region (GMS). One of these recent changes has been the implementation of the Cross Border Transport Agreement (CBTA) within GMS countries, and bi-lateral agreements on cross border facilities that will enable more efficient and reliable transport linkages connecting Laos PDR with ASEAN/GMS markets and the international ports in Indochina. The other major change was the advancement of the ASEAN Free Trade Agreement (AFTA), which will in principle remove customs duties within ASEAN countries. This will contribute to drastic changes in trade to/from/through Laos PDR, by promoting a great degree of mobility of goods, people, and investment into the ASEAN region. In these situations, the Lao government has embraced the transformation to a “land-linked country” as a major policy directive, essential to the country’s aspirations of graduating from “developing country” status.

However, there are still several constraints. In particular, the logistic sector and overall system remains insufficient. The current logistics system in Laos PDR is still below international standards in terms of efficiency, reliability and costs, due to inadequate infrastructure and an immature domestic logistics industry (JICA-IDCJ study, 2011).
Like many other countries in the world, a policy exclusively designated for logistics does not exist in Laos PDR. However, there are still some policies relevant to the development of the logistics sector in Laos PDR. The overarching policies on transport in Laos PDR comprise two components. The first is to provide an enabling, safe, and efficient transport system throughout the country, with low transport costs to end-users to support the government’s efforts to graduate from LDC status by 2020; and second, to transform from a land-locked country to a land-linked transit country in the GMS by:

- providing efficient and reliable transport infrastructure and facilities, particularly on transport routes; and
- facilitating cross-border transport of goods and people between and among neighboring countries.

2. BACKGROUND

Laos PDR has a total land area of 236,800 square km., in which about 6.8 million people (2013) are living. Socioeconomically, Lao PDR is classified as a lesser developed country with a gross domestic product (GDP) per capita of US$1,069 in 2011. Agriculture and electricity are important sectors for the economy, with GDP growth of 8% in 2012. Laos PDR has a centrally planned economy, with government ownership and control of productive enterprises of any size. In recent years, however, the government has been decentralizing control and encouraging private enterprise. The lack of available funds and the country’s low level of development make it especially important for Laos PDR to have access to efficient logistics channels for goods distribution (World Bank national accounts data, and OECD National Accounts data files, 2012).

Geographic factors provide large constraints for the efficient distribution of goods and services to all parts of the country. The country’s landlocked location provides barriers for import and export. Limao and Venables (2001) have estimated that domestic infrastructure explains 40% of transport costs for countries with access to sea ports, while landlocked countries using both domestic and transit country infrastructure together account for 60% of transport cost. Further estimates in the same study comparing land transport with sea transport cite seven times higher costs for land transport versus sea transport. This
demonstrates the second major reason Lao PDR currently requires high costs not only for import and export but also distribution within the country’s borders.

Following the policy of the Lao government in transforming Laos PDR from landlocked to land-linked, aiming to take advantage of its borders with five countries by developing major transportation networks linking China and Thailand, and Vietnam and Thailand via Laos PDR, there have been significant movements in transport infrastructure and trade to facilitate the private sector to maximize profits from increasing connectivity and integration. The initiative is motivated by the ADB, as a development partner, through the GMS framework and bilateral cooperation between Laos and its neighbors. Given the importance of the transport sector to Laos PDR’s development goals, the priority assigned to these initiatives by the government has been high. At present, there are four key elements that encompass the transport and logistics situation and system in Laos PDR: (1) the landlocked nature of the country, which creates a dependency on transit traffic through neighboring countries, (2) a geographically scattered population with low population density, (3) high dependence on subsistence agriculture, and (4) weak transport infrastructure that impedes the integration of scattered local and provincial markets. Based on this, it is evident that logistics development in Laos PDR should thus be one of the highest priority tools to materialize the transformation “from a landlocked country to a land-linked country.”

Current logistics problems have been a major business barrier in Laos PDR, as reported by the Ministry of Public Work and Transport, with empty return haulage, higher logistics costs, limited transport volumes, limited business opportunities in small markets, and difficulty in re-investing due to the financial limitations of logistics companies all being cited as major preventative issues for business expansion. Also, from a JICA study on logistics strategy (JICA-IDCJ study, 2011), there exist many common problems in infrastructure, market dynamics and structure, logistics, and cross-border administration. The major problems are highlighted therein as follows:

- a lack of transparency and standardization of cross-border procedures;
- insufficient roads and road facilities;
- a small logistic market;
- insufficient logistics facilities;
- inadequate return cargo (empty return haulage);
- prevalence of small and medium sized companies in logistic businesses;
- insufficient capacity of logistics industry administration.

3. OBJECTIVE

The purpose of this research is to analyze the changing role of Laos PDR from a landlocked country to be a land bridge providing direct linkages between its neighbors along the GMS North-South and East-West economic corridors and to explore the benefits to be realized from being a land-linked country.

4. RESEARCH METHODOLOGY

This paper was developed based on a literature review of previous research papers and reports from MPWT, JICA, ADB, and UN ECAPE.

5. AN OVERVIEW OF LAOS PDR

5.1 The importance of logistics in landlocked countries

According to ESCAP (2003), landlocked developing countries are confronted with a range of special constraints that inhibit their full participation in the globalization process. Each of the landlocked countries is disadvantaged by its lack of territorial access to and distance from the sea. For the landlocked countries, problems of distance are substantially compounded by the need to cross international borders and by the inability to regulate the through-transport process. As a result, the delivered costs of imports are higher, exports less competitive and attraction for foreign direct investment reduced.

However, economic development in the Asian region and emerging opportunities for inter-regional trade are stimulating new directions of trade which are creating a demand for landlocked countries to become “land-linking” countries, which can provide important transit services to their transit neighbors. In this regard, both landlocked and neighboring
transit countries can benefit from actions taken to increase the efficiency of transit transport (Jean-François Arvis, Gael Raballand, Jean-François Marteau, 2007).

5.2 The benefits Laos PDR may realize from becoming a land-linking country: Challenges and opportunities

Due to its geographical location, Laos has adopted the “land-linked” strategy; in order to realize this strategy, integration in the GMS community is essential as Laos PDR is in between larger economies like Thailand, Vietnam and China. Being a landlocked country, it is highly dependent on its neighbors. But at the same time, being coterminous to China, it can be seen as a bridge between China and the ASEAN-6 (Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand), and may function as a geographical link between Southeast Asia and “the huge northeastern neighbor” (Lindberg, 2006).

Since Laos joined the GMS program and ASEAN, the regional trade between Laos and GMS countries, especially Thailand, Vietnam and China (Yunnan) has increased significantly. The initiatives promote the “three C’s”: Connectivity, Competitiveness, and Community. Laos in particular has an opportunity to promote i) its strategic location in the center of the Indochina Peninsula with land transport connections to China, Vietnam, Cambodia, Thailand, and Myanmar, and ii) its rich natural resources, particularly hydropower and minerals including gold and copper. The CBTI / CBTA implementation will help to maximize the benefits of the sub-regional transport infrastructure and thus will assist Laos to access new trade markets, increase cross-border trade opportunities and tourism, and to become a major road link between the GMS countries (ESCAP, 2012). However, it will also pose threats, including the potential widening of the disparity with neighboring countries, easier transmission of infectious diseases, decreasing traffic safety, and the potential for increased slave trade and drug smuggling.

Most prominently, though, the connectivity among GMS countries will help transit of goods and people across borders via reduced transport costs. And it should instigate GMS countries to join hands in improving the infrastructure connectivity by establishing a mechanism and regulations that will facilitate goods and public transport among the countries, and perhaps further, to remove all obstacles and barriers to trade – improving on
such areas as tax and customs, transportation, terms of payment, and service regulations. These initiatives would facilitate a buildup of capacity and competitiveness in the regional marketplace.

As a result, local industries and/or consumers in Laos PDR will be able to purchase more goods imported from other countries at lower prices. As local industries can save the input cost by using cheaper imported goods, they will more easily be able to promote Lao products, export Lao products, and increase accessibility to markets in other countries.

5.2.1 Potential Problems

In general, inland countries such as Laos PDR need to overcome several disadvantages to facilitate economic growth. In the absence of seaport facilities, they have to transit through other countries’ territory for their external trade, and thus have high transportation costs to access seaports and world markets.

The Lao government embarked on turning the geographical “constraint” into an “opportunity” by launching the slogan “transforming the landlocked to the land-linked country”. However, as Lindberg (2006) noted, it may be difficult to realize as many costs are involved for maintenance, and there is also the risk of ending up as a “country of transit.” Indeed, at the present time, Laos PDR has small market and less products, as compared to China, Vietnam and Thailand. These countries could thus potentially better exploit the new opportunity versus Laos because they have a more important volume and variety of goods to export and exchange between them.

According to KPN (2013), landlocked countries have to pay highest transport cost for their exports to international markets, e.g. landlocked least developed countries (LLDCs) pay US$ 2,600 and US$ 3,300 per container of goods exported and imported, respectively, while their non-landlocked transit counterparts spend only US$ 1,000 and US$ 1,500, respectively. This is due to the remoteness from deep seaports, long journeys, and cumbersome transportation processes, as in most cases the transit countries are themselves developing countries.
As a landlocked and least developed country, Laos PDR is very dependent on imports of industrial products and other commodities from its neighbors as well as the rest of the world. At the same time, its exports suffer from high transaction and transport costs, offsetting the country’s relative competitiveness in terms of low labor costs and natural resource availability. The delivered costs of imports are higher, exports less competitive and attraction for foreign direct investment reduced. In addition, inadequate transport infrastructure and high logistics “service-link” costs have constrained industrial and economic integration.

5.3 Socioeconomic features and the international trade characteristics of Laos

Lao’s socioeconomic status has increasingly changed from a traditional agro-based economy to an urbanized and industrialized economy, as shown in the tables and figures below. This information illustrates a basic economic overview of Laos and ASEAN countries, as well as freight volumes, transit transport route destinations in ASEAN, and other information.

Table 5.1.1 shows the main pillars for the economy in Laos PDR. As can be seen, agriculture has been the cornerstone for the economy of Lao PDR. However, its relative importance has declined over time because of the rapid growth of other industries such as manufacturing and services.

<table>
<thead>
<tr>
<th>Table 5.1.1 Structure of the economy of Laos PDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>(% of GDP)</td>
</tr>
<tr>
<td>Agriculture</td>
</tr>
<tr>
<td>Industry</td>
</tr>
<tr>
<td>Manufacturing</td>
</tr>
<tr>
<td>Services</td>
</tr>
<tr>
<td>Household final consumption expenditure</td>
</tr>
<tr>
<td>General governmental final consumption</td>
</tr>
<tr>
<td>expenditure</td>
</tr>
<tr>
<td>Imports of goods and services</td>
</tr>
</tbody>
</table>
Table 5.1.1 Structure of the economy of Laos PDR

<table>
<thead>
<tr>
<th></th>
<th>1989</th>
<th>1999</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>(% of GDP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(average annual growth)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>4.8</td>
<td>3.4</td>
<td>3.7</td>
<td>..</td>
</tr>
<tr>
<td>Industry</td>
<td>11.8</td>
<td>11.7</td>
<td>8.2</td>
<td>..</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>12.8</td>
<td>-0.4</td>
<td>3.7</td>
<td>..</td>
</tr>
<tr>
<td>Services</td>
<td>6.1</td>
<td>7.3</td>
<td>9.8</td>
<td>..</td>
</tr>
<tr>
<td>Household final consumption expenditure</td>
<td>..</td>
<td>-7.8</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>General governmental consumption expenditure</td>
<td>..</td>
<td>9.7</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Gross capital formation</td>
<td>..</td>
<td>15.2</td>
<td>4.8</td>
<td>..</td>
</tr>
<tr>
<td>Imports of goods and services</td>
<td>..</td>
<td>-13.6</td>
<td>6.5</td>
<td>..</td>
</tr>
</tbody>
</table>


Table 5.3.2 shows freight volume by mode of transport in 2005. It shows that road transport was the most frequent transport mode to use for logistics services.

Table 5.3.2 Freight Volume by Mode of Transport

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Road Transport</td>
<td>440,018</td>
<td>n.a</td>
<td>2,399</td>
<td>195,996</td>
<td>1,652</td>
</tr>
<tr>
<td>- Rail Transport</td>
<td>10,521</td>
<td>n.a</td>
<td>0</td>
<td>8,874</td>
<td>3,442</td>
</tr>
<tr>
<td>- Inland Water Ways</td>
<td>25,839</td>
<td>n.a</td>
<td>621</td>
<td>59,196</td>
<td>4,171</td>
</tr>
<tr>
<td>- Sea Transport</td>
<td>22,941</td>
<td>n.a</td>
<td>0</td>
<td>31,332</td>
<td>440</td>
</tr>
<tr>
<td>- Air Transport</td>
<td>51</td>
<td>n.a</td>
<td>0</td>
<td>98</td>
<td>1</td>
</tr>
<tr>
<td>- Total</td>
<td>499,370</td>
<td>n.a</td>
<td>3,020</td>
<td>295,496</td>
<td>9,706</td>
</tr>
<tr>
<td>- Road Transport</td>
<td>88.11%</td>
<td>n.a</td>
<td>79.44%</td>
<td>66.33%</td>
<td>17.02%</td>
</tr>
<tr>
<td>- Rail Transport</td>
<td>2.11%</td>
<td>n.a</td>
<td>0.00%</td>
<td>3.00%</td>
<td>35.46%</td>
</tr>
<tr>
<td>- Inland Water Ways</td>
<td>5.17%</td>
<td>n.a</td>
<td>20.56%</td>
<td>20.03%</td>
<td>42.97%</td>
</tr>
<tr>
<td>- Sea Transport</td>
<td>4.59%</td>
<td>n.a</td>
<td>0.00%</td>
<td>10.60%</td>
<td>4.53%</td>
</tr>
<tr>
<td>- Air Transport</td>
<td>0.01%</td>
<td>n.a</td>
<td>0.00%</td>
<td>0.03%</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

Source: JETRO, ASEAN Logistics network map 2nd ed.
Table 5.3.3 indicates the main trading partners of Lao PDR. In Asia, the main trading partners of Lao PDR include Thailand, China, Viet Nam, Republic of Korea, Malaysia and Singapore.

**Table 5.3.3: Direction of Trade of Laos PDR (million US Dollars; calendar year)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exports, total</strong></td>
<td>1177.9</td>
<td>1323.9</td>
<td>1608.7</td>
<td>1521.0</td>
<td>2087.8</td>
</tr>
<tr>
<td>1. Thailand</td>
<td>475.5</td>
<td>431.5</td>
<td>568.7</td>
<td>423.7</td>
<td>689.7</td>
</tr>
<tr>
<td>2. China</td>
<td>45.1</td>
<td>77.3</td>
<td>135.9</td>
<td>306.0</td>
<td>510.9</td>
</tr>
<tr>
<td>3. Viet Nam</td>
<td>151.5</td>
<td>192.1</td>
<td>253.4</td>
<td>225.9</td>
<td>232.1</td>
</tr>
<tr>
<td>4. United Kingdom</td>
<td>1.4</td>
<td>42.3</td>
<td>54.5</td>
<td>62.3</td>
<td>69.9</td>
</tr>
<tr>
<td>5. Germany</td>
<td>34.6</td>
<td>43.0</td>
<td>42.0</td>
<td>48.0</td>
<td>53.3</td>
</tr>
<tr>
<td>6. United States</td>
<td>8.5</td>
<td>19.1</td>
<td>40.4</td>
<td>41.7</td>
<td>56.3</td>
</tr>
<tr>
<td>7. Korea, Rep. of</td>
<td>16.1</td>
<td>63.9</td>
<td>48.2</td>
<td>15.9</td>
<td>16.4</td>
</tr>
<tr>
<td>8. France</td>
<td>29.1</td>
<td>27.2</td>
<td>23.0</td>
<td>12.8</td>
<td>15.6</td>
</tr>
<tr>
<td>9. Japan</td>
<td>11.3</td>
<td>10.9</td>
<td>16.4</td>
<td>24.4</td>
<td>34.2</td>
</tr>
<tr>
<td>10. Malaysia</td>
<td>44.6</td>
<td>32.4</td>
<td>2.7</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Imports, total</strong></td>
<td>1652.4</td>
<td>2107.8</td>
<td>2836.8</td>
<td>2892.6</td>
<td>3499.7</td>
</tr>
<tr>
<td>1. Thailand</td>
<td>1125.4</td>
<td>1442.8</td>
<td>1932.6</td>
<td>1800.5</td>
<td>2348.4</td>
</tr>
<tr>
<td>2. China</td>
<td>185.6</td>
<td>195.2</td>
<td>295.0</td>
<td>413.9</td>
<td>524.1</td>
</tr>
<tr>
<td>3. Viet Nam</td>
<td>104.5</td>
<td>120.7</td>
<td>176.3</td>
<td>186.2</td>
<td>191.4</td>
</tr>
<tr>
<td>4. Japan</td>
<td>22.6</td>
<td>41.7</td>
<td>69.1</td>
<td>83.5</td>
<td>68.3</td>
</tr>
<tr>
<td>5. Korea, Rep. of</td>
<td>25.7</td>
<td>61.2</td>
<td>58.5</td>
<td>61.3</td>
<td>63.0</td>
</tr>
<tr>
<td>6. Singapore</td>
<td>45.2</td>
<td>43.0</td>
<td>28.1</td>
<td>40.4</td>
<td>25.3</td>
</tr>
<tr>
<td>7. France</td>
<td>11.2</td>
<td>12.6</td>
<td>20.1</td>
<td>62.7</td>
<td>15.7</td>
</tr>
<tr>
<td>8. Germany</td>
<td>12.0</td>
<td>34.8</td>
<td>25.1</td>
<td>18.1</td>
<td>21.4</td>
</tr>
<tr>
<td>9. Hong Kong, China</td>
<td>15.5</td>
<td>14.7</td>
<td>23.4</td>
<td>18.5</td>
<td>30.0</td>
</tr>
<tr>
<td>10. Australia</td>
<td>20.6</td>
<td>24.1</td>
<td>15.5</td>
<td>9.6</td>
<td>24.8</td>
</tr>
</tbody>
</table>

Source: ADB, Key Indicators for Asia and the Pacific 2011; (http://beta.adb.org/key-indicators/2011/country-tables)

### 5.4 Government policy to support Laos PDR to become a land-linked country

The Lao government has formulated the National Growth and Poverty Eradication strategy as a principle for national development, which aims to accelerate the pace of economic development to eradicate poverty, and graduate from the least developed country status by
2020. The development policy in the 6th National Social Economic Development Plan (Five Year Plan) comprises 3 pillars, including 1) promoting economic development with human development, 2) increasing competitiveness and utilizing comparative advantage to implement effective international economic commitments within the framework of the ASEAN, GMS and WTO initiatives, and 3) strengthening the positive linkages between economic growth and social development in addressing social issues (JICA-IDCJ study, 2011).

For this purpose, transforming Laos PDR from a landlocked country to a land-linked country by generating regional economic integration is a key initiative, and to achieve this, it has emphasized developing economic corridors, reducing trade barriers, promoting cross-border investment, and capitalizing on the benefit resulting from membership in the GMS, ASEAN, AFTA and WTO, together with bilateral agreements. ASEAN will establish a single market in the region by 2015. Regional cooperation frameworks in trade, investment and cross-border transport in GMS/ASEAN will diminish barriers to approaching foreign markets, as well as diversify the supply chain network in the GMS. The combined effect presents an opportunity for rapid economic development and transformation in Lao PDR. The key to the transformation is fully utilizing these potentialities by linking markets in GMS/ASEAN (JICA study, 2011).

According to Phavanh Nuanthasing (2013), the Laos PDR government has made commitments to implement the above initiatives as stated below:

- The Lao government is strongly committed to effective implementation, especially in the area of infrastructure development, trade regulations and transit transport systems. And it has introduced a new policy with an aim toward turning the country from a landlocked to a land-linked country through the creation of several programs and policies on infrastructure development as well as bilateral, sub-regional transport agreements with the all neighboring countries, in order to make an efficient and reliable transport system for transit transport routes, as well as develop a competitive transport industry with multi-modal transport options facilitate the cross-border transport of goods and people.
• The government recognizes the importance of bilateral, sub-regional and regional cooperation frameworks, such as various bilateral and multilateral agreements with neighboring countries, in particular GMS-CBTA and the various ASEAN framework agreements.

• In this regard, the Lao government has heavily invested in the improvement of its transport infrastructure and transport service. Each year, the Ministry of Public Work and Transport allocates more than 40% of their budget to upgrade and maintain the road network, mostly concentrating on the reconstruction and rehabilitation of the international linkages, as well as the designated routes of ASEAN and GMS. It does this specifically as part of efforts to promote connectivity through East-West and North-South Economic Corridors.

• In terms of trade and trade facilitation, it is committed to its bilateral and regional trade agreements, especially ASEAN Free Trade Area (AFTA), its commitments toward the ASEAN Economic Community in 2015, and its accession to the WTO.

• Laos PDR has set up a joint commission with key trading partners, aimed at promoting border trade at the local level among its neighboring countries, and established an inter-agency coordinating body in October 2010 called the National Trade Facilitation Strategy and Action Plan in July 2011.

6. Transport and logistics in the GMS and ASEAN network

After the establishment of the GMS in 1992, major international highways in the GMS have been developed with financial assistance mainly from ADB and JICA. In particular, three economic corridors, the East-West Corridor (EWC), North-South Corridor (NSC) and South Corridor (SC) have been developed, giving the highest priority to the integration of the regional economy by promoting trade and transport (ADB, 2012).

Laos PDR has also intensively developed international highways and major domestic highways, ultimately designated to be the Asian Highway (AH) and National Roads (NR), such as Road NR3, AH-12, AH-13, NR-3 and NR-8 (AH-15) and NR-9 (AH-16). This highway network drastically improves foreign market and international ports accessibility, and a highly efficient logistics system means goods and people move around the sub-region without excessive cost or delay.
Figure 1 shows the distance and average travel time between the main cities and border crossing points in Laos PDR and other cities in GMS countries (JICA study, 2011).

![Figure 1: Distances of major cities and border crossing points of Laos PDR with other GMS countries](image)

6.2 Review of the GMS North-South and East-West economic corridors development

Laos PDR provides alternative international corridors connecting Bangkok and Kunming, by two alternatives: via Hoixai and via Vientiane. It also provides a connection for Bangkok and Hanoi, via the second friendship bridge at Savannakhet-Mukdahan and via the third friendship bridge at Thakek-Nakhone Phanom.

Due to the geographical nature of the area (mountainous) and poor road surface conditions, the road transport in Lao PDR is less efficient than Thailand and Vietnam, as shown in Table 6.2.1 and 6.2.2.
Table 6.2.1 Routes connecting big cities in GMS via Laos PDR

<table>
<thead>
<tr>
<th>Section</th>
<th>Shortest Route</th>
<th>Alternative Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangkok-Hanoi</td>
<td>NR-12 Route (Bangkok-Thakek-Vinh-Hanoi)</td>
<td>NR-12 Route (Bangkok-Thakek-Vinh-Hanoi)</td>
</tr>
<tr>
<td>Bankok Kunming</td>
<td>NR - 3 Route (Bangkok-Huoixai-Boten-Kunming)</td>
<td>NR - 3 Route (Bangkok-Huoixai-Boten-Kunming)</td>
</tr>
</tbody>
</table>

Source: JICA-IDCJ study, 2011.

Table 6.2.2 Socioeconomic conditions in GMS in 2007

<table>
<thead>
<tr>
<th>Country</th>
<th>Population (Million)</th>
<th>GDP (Billion USD)</th>
<th>GNI per capital (USD)</th>
<th>Land Area (Million Km2)</th>
<th>Population Density (per Km2)</th>
<th>Rural Population (% Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>14.2</td>
<td>7.3</td>
<td>490</td>
<td>176.5</td>
<td>80.4</td>
<td>79.7</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>5.8</td>
<td>3.4</td>
<td>500</td>
<td>230.8</td>
<td>25.0</td>
<td>79.0</td>
</tr>
<tr>
<td>Myanmar</td>
<td>48.4</td>
<td>N/A</td>
<td>281</td>
<td>657.6</td>
<td>73.6</td>
<td>68.7</td>
</tr>
<tr>
<td>Thailand</td>
<td>63.4</td>
<td>206.3</td>
<td>3,050</td>
<td>510.9</td>
<td>124.2</td>
<td>67.4</td>
</tr>
<tr>
<td>Vietnam</td>
<td>84.1</td>
<td>61</td>
<td>700</td>
<td>310.1</td>
<td>271.3</td>
<td>73.1</td>
</tr>
<tr>
<td>Yunnan/Guangxi</td>
<td>92.3</td>
<td>75.4</td>
<td>702</td>
<td>630.8</td>
<td>150.4</td>
<td>N/A</td>
</tr>
<tr>
<td>Total/Average</td>
<td>308.2</td>
<td>-</td>
<td>1,105</td>
<td>2,516.6</td>
<td>122.5</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: ADB, 2008

Banomyong (2007) compared and evaluated the current transport network and service in the GMS, among 6 countries, excluding Cambodia, and found that only the roads in Thailand and the railways in Thailand and Yunnan/Guangxi can be evaluated as being “good condition.” The airports in Laos PDR, and the road and the ports in Myanmar are evaluated as being “poor condition.” Table 6.2.3 below describes the level of transport services in the major cities of the GMS.

Table 6.2.3 Evaluation of the transport network and services across GMS

<table>
<thead>
<tr>
<th>Country</th>
<th>Road</th>
<th>Port</th>
<th>Inland-water</th>
<th>Airport</th>
<th>Railway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lao PDR</td>
<td>Fair/Poor</td>
<td>N/A</td>
<td>Fair/Poor</td>
<td>Poor</td>
<td>N/A</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Poor</td>
<td>Poor</td>
<td>Fair</td>
<td>Poor</td>
<td>Fair</td>
</tr>
<tr>
<td>Thailand</td>
<td>Good</td>
<td>Fair</td>
<td>Fair</td>
<td>Good/Fair</td>
<td>Good</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Fair/Poor</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
</tr>
<tr>
<td>Yunnan (PRC)</td>
<td>Fair/Poor</td>
<td>Fair</td>
<td>Good/Fair</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Guangxi (PRC)</td>
<td>Fair/Poor</td>
<td>Fair</td>
<td>Good/Fair</td>
<td>Good</td>
<td>Good</td>
</tr>
</tbody>
</table>

7. Current state of the transport and logistics services in Laos PDR

7.1 Lao transport sector policy and master plan

Infrastructure in Laos is among the least developed in ASEAN. As a landlocked country, Laos aims to benefit from the regional trade and economic growth by facilitating transport between the other countries, especially between Thailand and Vietnam. Its infrastructure is adequate for the transit of goods, but in general Laos’ road network is in poor condition and low in density. Nevertheless, 90% of domestic transport is by road.

The Ministry of Public Works and Transport (MPWT) is responsible for the planning, construction and macro-management of roads, water ways, civil aviation, transport, communication, housing and urban planning for urban and rural areas nationwide (decree, 1999). The various Provincial Departments of Public Work and Transport (DPWT) are responsible for implementation, construction and maintenance of roads within their respective provinces or municipalities, as delegated by the MPWT (agreement, 1993).

- **Laws under MPWT**
  1. Road law
  2. Land Transport Law (revised & being endorsed)
  3. Traffic Law (revised & being endorsed)
  4. Multimodal Transport Law (newly drafted & being endorsed)

- **Road Transport Agreements**

The most important trade and trade facilitation (TTF) initiative in the GMS program is the Framework Agreement on Facilitating Cross-Border Transport of Goods and People (CBTA), a compact and comprehensive multilateral instrument which covers all the relevant aspects of cross-border transport facilitation, including single-window inspection; cross-border movement of people; transit traffic regimes; exchange of commercial traffic rights; infrastructure, road and bridge design standards, road signs and signals.
Table 7.1: Road Transport Agreements, 1996-2013

<table>
<thead>
<tr>
<th>Name of Agreement</th>
<th>Contracting Parties</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement on Road Transport Between Laos PDR and Vietnam</td>
<td>Laos-Vietnam</td>
<td>24 Feb 1996</td>
</tr>
<tr>
<td>Agreement on Road Transport Between Laos PDR and China</td>
<td>Laos-China</td>
<td>12 Mar 1993</td>
</tr>
<tr>
<td>Agreement on Road Transport Between Laos PDR and Thailand</td>
<td>Laos-Thailand</td>
<td>03 May 1999</td>
</tr>
<tr>
<td>Agreement on Road Transport Between Laos PDR and Cambodia</td>
<td>Laos-Cambodia</td>
<td>21 Oct 1999</td>
</tr>
<tr>
<td>Framework Agreement on the Facilitation of goods in Transit</td>
<td>ASEAN</td>
<td>16 Dec 1998</td>
</tr>
<tr>
<td>Cross-Border Transport Agreement</td>
<td>GMS</td>
<td>1999</td>
</tr>
<tr>
<td>Tripartite Transport MOU</td>
<td>Cambodia-Laos-Vietnam</td>
<td>Jan 2013</td>
</tr>
</tbody>
</table>


Table 7.2 shows the current road network in Lao PDR and classification.

Table 7.2: Road networks and classification in Laos PDR

<table>
<thead>
<tr>
<th>Classification</th>
<th>National</th>
<th>Provincial</th>
<th>District</th>
<th>Urban</th>
<th>Rural</th>
<th>Special</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>48.03</td>
<td>20.30</td>
<td>8.06</td>
<td>72.48</td>
<td></td>
<td>10.88</td>
<td>159.76</td>
</tr>
<tr>
<td>Asphalt Concrete</td>
<td>588.44</td>
<td>31.4</td>
<td>7.50</td>
<td>76.97</td>
<td></td>
<td></td>
<td>704.73</td>
</tr>
<tr>
<td>Paved</td>
<td>4,520.07</td>
<td>742.34</td>
<td>244.98</td>
<td>684.78</td>
<td>152.37</td>
<td>187.79</td>
<td>6,496.32</td>
</tr>
<tr>
<td>Gravel</td>
<td>1,725.69</td>
<td>4,522.61</td>
<td>2,973.97</td>
<td>901.97</td>
<td>4,716.82</td>
<td>480.56</td>
<td>15,321.61</td>
</tr>
<tr>
<td>Earth</td>
<td>470.15</td>
<td>2,772.43</td>
<td>2,283.16</td>
<td>460.58</td>
<td>13,886.47</td>
<td>1,046.52</td>
<td>20,919.31</td>
</tr>
<tr>
<td>Total</td>
<td>7,352.38</td>
<td>8,089.08</td>
<td>5,517.67</td>
<td>2,160.78</td>
<td>18,755.65</td>
<td>1,725.75</td>
<td>43,601.31</td>
</tr>
</tbody>
</table>

Notes: 1) Almost all of the paved roads are national or urban roads, 2) Of the national roads, only half are paved, 3) Of the urban roads, only one-quarter are paved, and 4) Half the roads in the country are not paved (Sources: Road network statistics, Technical and Planning Division, Road Department, MPWT, 2012)

7.2 Review of Transport Network in Lao PDR

Laos PDR is in the process of redefining itself as a “land-linked” rather than landlocked country, aiming to take advantage of its borders with five countries by developing major transportation networks linking China and Thailand, Vietnam and Thailand via Laos PDR. These routes would also facilitate Lao exports to neighboring countries. Informal cross-border trade helps low-income Laotians by providing cheap consumer imports, and a
market for their goods. The government of Lao PDR continues with its efforts to develop the country’s infrastructure, particularly the road sector as detailed below:

(1) Road network:

The road transport network in Laos PDR is used for passenger and cargo freight traffic. The Mekong River is used for transportation of goods and people but difficult navigation limits its capacity to function as a significant transport mode and further expand trade volume among the six regional countries. Approximately 53% of the import volume in Laos is concentrated at customs at Vientiane, the capital, and 53% of exports are concentrated at customs at Savannakhet.

The exports and imports of Lao PDR have long depended on the ports in Thailand. Now that the Second Mekong International Bridge was completed, and the initial implementation of the CBTA came into force between Lao Bao in Vietnam and Dansavanh in Lao PDR, it is possible to choose a route of shorter transporting distance connecting to Vietnamese ports such as Danang. The cost competitiveness of different ports is an important factor to consider in route selection. It will be necessary to understand the present situation and the prospects regarding the competition in transport infrastructure. There are four bridges, as detailed below:

- The first bridge connecting Thailand with Laos, connects Nongkhai with the Laos capital Vientiane, opened in 1994;
- the Second Thai-Lao Friendship Bridge - a bridge over the Mekong river that connects Mukdahan with Savannakhet in southern Laos, opened in late 2006;
- the third Thai-Lao bridge linking Nakhon Panom with Khammuan, opened in 2012;
- and the Fourth Bridge will soon connect Houaysai / Chiang Khong to Chiang Rai, and when finished, could link Thailand via Laos and connect to southern China as only a 245-kilometre-long road.
(2) Road condition:

Looking at road conditions in the North-South Economic Corridor, most roads along NR-3, excluding those between Vientiane and Luangphabang, are evaluated as being in good condition, while roads in the East-West Economic Corridor, including NR-9 and NR-12, are evaluated as being poor condition.

(3) Maximum axle load

The pavement of the road networks in Laos PDR is designed for a legal axle limit of 9.1 tons per axle (road design manual, 1996). However, the road network in the GMS region, including Thailand and Vietnam, is designed for a higher axle load, limited to 11.1 tons per axle. At NR-9, the carryout trunk road from Thailand and Vietnam, the road has been destroyed because of being overloaded.

(4) Railway network

Railway service in Laos PDR is minimal and not available. The governments of Laos PDR and Thailand have agreed to extend the railway in Thailand across the Mekong River, using the Friendship Bridge, and to establish a new railhead near Vientiane. There is only a 3.5 km section connecting the First Lao-Thai Friendship Bridge and Nongkhai. It has been opened since 2009 for public transport, but is not used for cargo. There is a railway extension project under negotiation between the Lao government and the Thai government to extend the track by 9 km, up to the capital at Vientiane and a logistics park.

The Lao government has approved a railway development master plan, with a target realization year of 2020. In the plan, the priority project is a Northern Line, connecting Vientiane and Yunnan, China, and a Southern Line, connecting Vientiane with Pakse, running parallel to the NR-13. This development could be considered as an alternative to the road system.
(5) Aviation

Laos PDR has only a few direct flights, in particular to Thailand, Vietnam, China (Kunming), Cambodia, Singapore and Korea. Sometimes, there are not sufficient flights, in particular for the high season. There are four major international airports, including Vientiane, Luangphabang, Savanakhet and Pakse, and another domestic airports. Air transport does not play a significant role for freight transport because of high costs and the low value of exports.

(6) Inland-water transport

The Mekong River and its feeders flow through the country, totaling over 2,000 km; however, rapids, falls and low water levels during dry season reduce the navigable length of the river transport to only 1,300 km. There are 21 river port facilities on the Lao PDR side of the river. However, the traffic volume by river has been decreasing because of its unstable conditions and the development of road networks.

7.3 Logistics infrastructure in Laos PDR

There are logistic services companies in Laos PDR, totaling 6,720 trucks aged 10-20 years, belonging to 63 companies, and bus services as passenger vehicles, comprising 38 companies and 74 associations.

It is believed that logistics is important for growing the country’s competitiveness. In terms of logistics strategies, the overall objective of Laos PDR is to become a “Regional Logistics Service Hub in GMS.” It believes this can be achieved by the development of three key of national logistics strategies as below:

- **Integration of cargo flows:** Comprising the development of logistic hubs, improvement of major logistic routes, improvement of transport efficiency, and provision of value-added logistics services;

- **Business simulation:** Attracting foreign logistics business, strengthening domestic logistics businesses, and strengthening logistics sector administration;
• **Market expansion:** facilitation of CBTA, more improvement of cross border points, liberalization in Logistic market

Laos PDR still does not have logistics parks for exports and imports. Logistics issues at cross-border checkpoints, and along the main corridors, are still less developed and in shortages.

**CONCLUSION**

The Lao government has made a serious commitment to transform the country from landlocked to land-linked, aiming to take advantage of its borders with the five neighboring countries by developing major transportation networks, linking China and Thailand, and Vietnam and Thailand, via Laos PDR. There have been significant investments in transport infrastructure and trade by facilitating the private sector to maximize its profits from the increasing connectivity and integration. The initiative is motivated by the ADB as development partners through the GMS framework, and through bilateral cooperation between Laos and its neighbors. The economic corridor development concept has been established, focusing on the development of transport infrastructure to connect Lao PDR with neighboring countries, including the construction of the East-West Economic Corridor (EWEC) and the North-South Economic Corridor (NSEC), and the promotion of joint economic opportunities along the corridors.

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The Potential Economic Benefits of ASEAN Logistics Connectivity for Thailand

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Abstract: The purpose of this paper is to examine the potential economic benefits of ASEAN logistics connectivity for Thailand. Logistics connectivity plays a key role in enhancing the ASEAN Community in two aspects: as a priority integration sector underpinning the AEC and as a foundation of the ASEAN economic union. With enhanced ASEAN logistics connectivity, ASEAN can be more competitive and resilient. For Thailand, the potential economic benefits of ASEAN logistics connectivity are three primary elements. First, lower logistics costs combined with the country’s favorable geographic position increase Thailand’s competitiveness in global markets. Second, logistics connectivity should enhance the flow of goods and services between Thailand and other ASEAN member countries. For investment, Thailand may position itself as the host for further (or new) economic agglomeration, as well as an integrated production network, and receive more inward FDI. Third, improvement in ASEAN connectivity may enhance economic development in Thailand. Realizing the initiation of the ASEAN Community in 2015 and further connecting into the global economy are also (more broad) benefits for Thailand stemming from improved logistics connectivity.

1. INTRODUCTION

In an era of globalization, logistics connectivity has become a more critical element than ever for competitiveness, both at the company level and at the economy or country level. Connectivity is important because businesses nowadays have to the opportunity or necessity to deal with a much broader market area and production base, higher
competition, and more liberalization in regional and global marketplaces. Accordingly many countries have taken steps to try to improve their logistics connectivity.

The Association of Southeast Asian Nations (ASEAN) is one of the regions that has placed a strong emphasis on enhancing connectivity among the ten member countries (and also with other Asian countries). For ASEAN, seamless border connectivity in the region is an important requirement for achieving true economic integration in the union in 2015 and to having a sustainable ASEAN Community in the future.

Connectivity in ASEAN will significantly benefit stakeholders in the region. Companies who participate in international trade will gain direct benefits from lower logistics costs and a higher degree of competitiveness in the global market. At the economy-wide level, an increase in trade and investment, a higher quantity of business opportunities, and a higher level of economic development generally are serious potential benefits (ASEAN, 2010; Das et al. 2013).

Located in the center of Southeast Asia, Thailand is very well positioned to further tap into the Southeast Asia economic network, and the benefits of this integration will help improve Thai economy. Thus, the purpose of this paper is to examine the potential economic benefits of ASEAN logistics connectivity for Thailand. Knowing these potential economic benefits for Thailand can help the Thai government develop strategies to optimize the delivery and realization of the benefits from ASEAN connectivity.

2. LINKAGES BETWEEN ASEAN LOGISTICS CONNECTIVITY AND THE ASEAN COMMUNITY

The ASEAN Community will be composed of three pillars: the ASEAN Political-Security Community (APSC), ASEAN Economic Community (AEC), and the ASEAN Socio-Cultural Community (ASCC). To achieve the opening of the ASEAN Community in 2015, ASEAN has been working to promote regional economic integration. The region is intended to be integrated politically, economically, and socially. With ten member countries, a truly integrated region would not be possible without a seamless connection between all member states, especially in terms of logistics. This is the major reason how
the ASEAN logistics connectivity will play an important role in truly achieving the “ASEAN Community.”

The next sections will explore in more detail how ASEAN logistics connectivity is necessary for the ASEAN Community by looking at two aspects: (i) logistics connectivity as one of the priority integration sectors to be liberalized under AEC and (ii) as a foundation of ASEAN community building. These two aspects are complementary to each other.

2.1 As a Priority Integration Sector under AEC

The logistics sector was included in the list of priority integration sectors under the AEC in August 2007. ASEAN has underscored the necessity of the logistics sector to the overall plan and thus will aim to liberalize it in the first group of major directives. A roadmap for the integration of logistics services has been adopted. The objective is to create the ASEAN “single market” by liberalizing and facilitating regional logistics services and providers. The ultimate aim is to create and enhance the competitiveness of the ASEAN production base by integrating the ASEAN logistics environment.

There are five measures under this roadmap. The first measure is substantial liberalization of logistics services. The second measure is to enhance the competitiveness of ASEAN logistics providers through trade and logistics services facilitation. Increasing the capability of ASEAN logistics service providers is the third measure. The fourth measure relates to human resource development and the fifth measure is to enhance multi-modal transport infrastructure and investment.

2.2 As a Foundation of ASEAN Community Building

With the plan to achieve the opening of the ASEAN community in 2015, ASEAN leaders realized the importance of boosting connectivity in the region. At the 17th ASEAN Summit on 28 October, 2010 in Ha Noi, Viet Nam, the Master Plan on ASEAN Connectivity (MPAC) was adopted. ASEAN leaders saw the potential of ASEAN to become a hub for transportation, information and communication technology (ICT), and tourism for the
wider region. Moreover, a better-connected region is a necessity for a more competitive and resilient ASEAN. Hence, strategies and action plans to enhance ASEAN connectivity were implemented in three key areas (figure 1).

Figure 1. How ASEAN Connectivity facilitates the ASEAN Community
Source: Master Plan on ASEAN Connectivity, ASEAN

In the first area, physical connectivity, the objective is to connect and improve all modes of transportation (air, road, rail, and maritime), by upgrading the existing infrastructure and developing new infrastructure and logistics facilities in the region. Harmonization of the regulatory framework(s) is also important for physical connectivity. To have integrated and seamless connectivity will require the development of a multimodal transport system, enhanced ICT infrastructure, and energy sector integration in the region. Examples of
priority projects in this regard are the ASEAN Highway Network (AHN), Singapore Kunming Rail Link (SKRL), ASEAN Power Grid (APG), and Trans-ASEAN Gas Pipeline (TAGP).

Second, removing the barriers to movement of goods, services, and skilled labor is needed for ASEAN to have institutional connectivity. Eliminating tariff and non-tariff barriers, harmonizing standards and conformity assessment procedures, and transportation facilitation agreements are strategies for developing “soft” infrastructure. The National Single Window and the ASEAN Single Window are examples of projects under this connectivity.

Lastly, two strategies have been used to develop person-to-person connectivity, which are promoting deeper intra-ASEAN social and cultural understanding, and encouraging greater intra-ASEAN personal mobility. This person-to-person connectivity works like “social-cultural glue” to support true integration in ASEAN, with the objective to strengthen overall unity in the region.

3. POTENTIAL ECONOMIC BENEFITS OF ASEAN LOGISTICS CONNECTIVITY FOR ASEAN

To achieve the realization of the ASEAN Economic Community (AEC), there are four strategies that the community will follow, namely: establishing a single market and production base, ensuring a highly competitive economic region, encouraging equitable economic development, and achieving full integration for the region into the global economy. Enhanced ASEAN logistics connectivity will benefit all of these elements. It will enhance the development of a single market and production base, create (new or further) development to many parts of the region, help connect ASEAN to other countries and global markets, and enhance internal integration and cooperation within ASEAN.

In the case of Thailand, as an economy that depends on exports and as a major destination for foreign direct investment (FDI) in the region, the country can tap into the network and realize significant benefits from enhanced ASEAN logistics connectivity.
The following section describes the potential economic benefits of ASEAN logistics connectivity for Thailand. The potential benefits for Thailand are broadly divided into five areas which are (i) an increase in competitiveness, (ii) trade expansion and larger FDI, (iii) economic development, (iv) enhancing integration and cooperation in ASEAN, and (v) connecting into the global economy.

3.1 An Increase in Competitiveness

For Thailand, approximately two thirds of the gross domestic product (GDP) comes from exports and this makes Thailand an export-dependent country (Xianghui, 2012). The National Economic and Social Development Board (NESDB) of Thailand reports that logistics costs, as a share of gross domestic product (GDP) was 14.3% in 2012, decreasing from 17.1% in 2009 (NESDB, 2013). Even though this ratio of logistics cost to GDP is in a downward trend, the ratio is still higher than Singapore and Malaysia. For OECD countries, the logistics cost to GDP ratio ranges between 8-10% (Xianghui, 2012).

In a globalized world, international trade and global supply chains are varied and increasingly complex. For any country to be competitive in this arena, lower logistics costs and an efficient logistics system will be necessary (World Bank, 2012). Thus, logistics connectivity is highly important and necessary for Thailand’s competitiveness. A better-connected ASEAN can lower logistics costs and improve national competitiveness for Thailand.

![Figure 2. Time Savings from Logistics Improvement (in number of days)](source: Itakura (2013))
Itakura (2013) evaluates the impact of liberalization and improved logistics connectivity and facilitation among ASEAN countries by using a simulation analysis based on a dynamic CGE model. To consider the time savings from logistics improvements, Itakura assumes a 20% improvement in logistics for imports. The results show that for businesses in Thailand, the average time savings will be around one and a half days (Figure 2).

Another factor in the Thai competitiveness picture is the advantage the geographic position of the country affords it from a logistics perspective. Thailand is located at the center of Southeast Asia. With better logistics connectivity, for both hard and soft infrastructure, foreign customers will be further attracted to pursue regional business opportunities based in Thailand.

3.2 Trade Expansion and Higher FDI

Logistics connectivity is one of the major determinants of international trade and foreign investment. Better logistics connectivity with the ASEAN network will facilitate the flows of goods, services, people and capital.

3.2.1 Enhanced Intra-Regional Trade

After the Asian financial crisis in 1997, Thailand has made a concerted effort to strengthen both economic and non-economic ties with its neighboring countries in the ASEAN community. Since 2003, ASEAN has become the major market for Thai exports (Figure 3).
According to Xianghui (2012), to compete in international markets, countries need to maintain their competitiveness in exports. Even if countries can produce goods at a lower cost, inefficient transportation can more than offset the competitiveness from a cost perspective.

As stated previously, with better logistics connectivity, the flow of goods within ASEAN will be facilitated. And this enhances the overall level of market integration among ASEAN countries. More trade in the region will then result in a higher overall welfare for people in ASEAN and accordingly also in Thailand.

### 3.2.2 Increasing Tourism Flows and Economics Gains from Tourism

Lumsdon and Page (2004) mention that the physical flow of people is one of the factors that countries need to consider and improve upon in order to enhance their overall tourism appeal and level of services going forward. Within this backdrop, transportation and logistics connectivity will clearly play an important role in increasing the competitiveness of the tourism sector, because better transportation and logistics infrastructure and services will lead to a better physical flow of people (i.e., tourists).
For Thailand, the tourism sector is an important contributor to the economy. In 2012, the tourism industry contributed 7.3% of total GDP, and the World Travel & Tourism Council (2013) has forecasted that the number will rise by 6.2% in 2013 and further increase by 6.8% per year from 2013-2023.

Improved logistics connectivity in ASEAN can help facilitate Thailand to continue its strong growth as a major tourist destination well into the future. As one potential future scenario, tourists from outside ASEAN may choose to visit ASEAN member countries as a package. Better transportation in the region will encourage them to visit many countries. Not only tourists from outside ASEAN but also tourists from other ASEAN countries often visit Thailand. One example of connectivity aiding this growth in tourism figures is the case of Thai-Lao Friendship Bridge. Since the bridge opened, there has been an increase in tourists from Laos. The same story is true for the border bridge between Thailand and Myanmar.

3.2.3 Facilitate Economic Agglomeration and an Integrated Production Network

The global economy nowadays is characterized by global value chains (UNCTAD, 2013). Many firms choose to locate their production bases in many different countries and trade intermediate goods and services. There are two major motives for these investment decisions: to serve the domestic market and to gain access to cheaper inputs abroad (Aldaba et al., 2009). The first type of foreign investment is horizontal foreign direct investment (FDI), and the second type is vertical FDI. In the second case, firms separate their production into many production blocks and locate them in different countries according to the respective advantages afforded by the locations. Firms will fragment their production when benefits from the cheaper input costs are higher than the costs of transporting and communicating between the production blocks. This creates a production network.

In 2010, approximately 56% of the exports of East and Southeast Asia were from participating in a production network (UNCTAD, 2013). ASEAN is famous for being the a major component of many such production networks. The same is true for Thailand. Since
the Plaza Accord in 1985, Thailand has been the recipient of FDI flows from Japan, Taiwan, and Korea (Decharuk et al., 2009). Multinational corporations (MNCs) from these countries have set up economic agglomerations in Thailand and ASEAN. The major sectors of these agglomerations are the automobile industry and electronic and electrical appliances industries.

With improved connectivity, there is an increased likelihood that MNCs will continue or intensify their relocation of production bases to Thailand and to ASEAN. The added connectivity will produce an additional incentive for export-oriented firms. They can produce in Thailand and export to other countries.

3.2.4 Attract Foreign Direct Investment to the Region

When investing abroad, firms will consider many factors related to the ‘ease of doing business’ in that country. World Bank (2013) provides a ranking called ‘Doing Business 2013’, which summarizes key indicators for 185 countries, for categories ranging from starting a business or dealing with construction permits to resolving insolvency. Logistics connectivity is one of the major factors listed in the ‘trading across borders’ topic. With improved connectivity, the number of documents, amount of time, and cost to export and import will all tend to be lower. This will lead to an increase in the attractiveness of investing or ‘doing business’ in Thailand.

In 2013, Thailand ranked 18th on the World Bank’s list, while Singapore is in the top spot, and Malaysia taking 12th place (World Bank, 2013). With improvement in regional logistics connectivity, and the associated increase in the ease of doing business – particularly given the industries that have traditionally been attracted to establishing a production base in the country - Thailand may be able to reach a higher rank in this league table.
3.3 Economic Development

In the Master Plan for ASEAN Connectivity, one of the key objectives is to promote economic development in the region. Through increased connectivity, ASEAN leaders aim to enhance the well-being and livelihood of ASEAN people, develop the connection between ASEAN members and also the countries’ own citizens, and to create development in the local economies (ASEAN, 2010).

According to Xianghui (2012), better logistics connectivity has an impact of a large scale on the economy. All economic activities use logistics infrastructure or services at some point, for transporting factors of production or delivering the output. A change in logistics costs can drastically affect the competitiveness of an economy as a whole.

Much has been said about the regional economic development opportunity that increased logistics connectivity offers. But within Thailand there can be significant benefit from improved connectivity as well. People in the rural areas will have easier access to basic necessities. When a new road reaches a community, it will be followed by people, tourists, businesses, and thus development.

3.4 Enhancing Integration and Cooperation in ASEAN

To have a single market and production base, ASEAN needs to have a seamless connection between ASEAN members as a necessary precondition (ASEAN, 2010). From the ‘three pillars’ of the ASEAN community, the connection between people is the most important factoring pillar.

Once ASEAN people are connected, they can continue to better understand each other in terms of social, cultural, and political concerns and practices. This is the starting point for enhancing economic connectivity. People would like to buy goods from other ASEAN member countries and also to have increased opportunities to invest in those countries. Thus, to achieve the ASEAN community in 2015 and to have a sustainable union, a well-connected ASEAN is a vital key. And with this integration and cooperation in ASEAN, Thailand will benefit from being a member in this region.
3.5 Connection into the Global Economy

Located in Southeast Asia, ASEAN has the geographical advantage of connecting with East Asia and South Asia with overland transportation. ASEAN also enjoys a good location for deep-sea ports, which are the major means of transporting goods to and from other countries. With these advantages, ASEAN is clearly well connected to the global market.

Within ASEAN, Thailand itself is well positioned – it is part of the economic corridors of the Greater Mekong Subregion (GMS), three economic corridors that go through Thailand and facilitate connectivity with China and India (Figure 4).

From Thailand’s perspective, enhanced logistics connectivity in ASEAN will significantly help extend the nation’s own global market connectivity.
4. CONCLUSION

Spurred on by the wave of globalization in the recent era, ASEAN has evolved to become a more competitive and resilient region. The ASEAN Community in 2015 will increase the region’s economic integration through cooperation and coordination - one major factor in facilitating this will be ASEAN logistics connectivity. The logistics sector plays a key role as a priority sector for integration under the AEC. Indeed the Master Plan for ASEAN Connectivity serves as a foundation for the ASEAN Community.

Enhanced ASEAN logistics connectivity will also provide economic benefits for the Thai economy. Better connectivity in ASEAN will make Thailand more competitive in the
global market, expand trade and investment, enhance economic development, facilitate true integration with the region and overall boost Thailand’s connection into the global market.

With all the potential benefits on the table, policymakers need to prepare strategies to make these potential benefits become reality. First, governments of the ASEAN countries need to cooperate to make the logistics connectivity plans come to fruition. Second, to be prepared to reap the benefits from the increased regional connectivity, the Thai government has to prepare the domestic economy, in term of infrastructure, business environment, human resources, and policies, to be ready to connect fully to the region and world via enhanced ASEAN connectivity.

5. REFERENCES


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World Travel & Tourism Council (2013). *Travel & Tourism: Economic Impact 2013 Thailand*.


The Role of Singapore as a Trading Hub under the ASEAN Logistics Connectivity

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Center for Maritime Studies and Department of Civil & Environmental Engineering
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E–mail: ceefwatf@nus.edu.sg

Abstract: Singapore has been the key trading hub of ASEAN and a major international port of call since the mid-1980s. Although its superior geographical location at the southern end of the Strait of Malacca, and favorable sea channel and natural coastal conditions have been a major positive factor, the success of Singapore today owes greatly to its historical economic ties with fellow ASEAN member countries, as well as its own efforts to create an efficient pro-business environment supported by a comprehensive and sound infrastructural system. The continued success of Singapore will hinge on its ability to be fully integrated with the entire ASEAN region and contribute to the development and growth of its fellow ASEAN member countries. In the meantime, to continue to serve as an efficient international gateway to ASEAN, it is important that the Port of Singapore must stay competitive and continue to attract international traffic to the region.

1. INTRODUCTION

ASEAN as a whole is strategically located on the major international trading routes linking East Asia or Australia/Oceania to Europe, South Asia, the Middle East and Africa. This strategic geographical location places the ASEAN countries in a highly advantageous position to further develop regional and international trade. On top of this, due to the rapid economic development of China in the last three decades, as well as the strong economic growth of India in recent years, ASEAN has found itself in a central location bound by
economically vibrant regions, represented by China in the north; Japan, Korea and Taiwan in the northeast; India in the west, and Australia and New Zealand in the south.

To take advantage of the highly favorable environment for trade and economic development, there is an urgent need for ASEAN member countries to make serious efforts to strengthen their logistics connectivity to respond to the opportunities presented by the aforementioned regional and global dynamics. This paper examines the role that Singapore, as a regional and international trading hub, can play to enhance logistics connectivity in ASEAN and help realize the ASEAN vision to become an important economic center in the world.

2. CURRENT STATE OF TRADE IN ASEAN

The total trade volume of ASEAN has grown steadily from 2000 to 2011. As shown in Figure 1, ASEAN’s total trade grew from US$759 billion in the year 2000 to US$2,387 billion in 2011 (ASEAN Trade Database 2012). Figure 1 also shows the respective contributions of intra-ASEAN and extra-ASEAN trade to these totals. Extra-ASEAN trade refers to trade between ASEAN countries and countries outside ASEAN, and intra-ASEAN trade refers to trade among the ten member countries of ASEAN. As is shown in the figure, the share of intra-ASEAN trade of total ASEAN trade has remained relatively unchanged, within the range of 22 to 25% over this 10 year period.
Figure 1. Total ASEAN Trade from 2000 to 2011
(Compiled from ASEAN Trade Database (ASEAN 2012))

Depicted in Figure 2 is a breakdown of the percentage contributions of ASEAN trade in 2011 by the main trading partners of ASEAN (ASEAN Trade Database 2012). The data reveal that intra-ASEAN trade, among the ten ASEAN member countries themselves, constitutes 25% of total ASEAN trade – a larger share than any external trading partner of the ASEAN block. The other key trading partners of ASEAN, in order of decreasing magnitude of percentage share, are China (12%), Japan (11%), the EU (10%), the USA (8%), the Republic of Korea (5%) and India (3%).
3. CURRENT ROLE OF SINGAPORE

Because of its beneficial geographical location overseeing the narrow Strait of Singapore at the southern end of the Strait of Malacca, in the center of Southeast Asia, Singapore has been acting as a gateway for international trade into the region from as early as the 13th century by serving as the main source of foreign products to the region (Heng 2005). Today, Singapore is the busiest port in the world in terms of shipping tonnage, with some 120,000 vessel calls annually, serving trade routes connected to more than 600 ports in over 120 countries (MPA 2013). In terms of annual throughput of containers handled, Singapore ranks number two in the world since 2010 after Shanghai Port (World Shipping Council 2013). Singapore is also one of the top bunkering ports in the world, lifting about 30 million tonnes of bunkers annually (MPA 2013). These statistics clearly demonstrate Singapore’s indeed a major and important international shipping hub.

Singapore’s role as the trading hub of Southeast Asia is evident by its share of total ASEAN trade. The records of the ASEAN trade database (ASEAN 2012) show that from 2004 to 2011, Singapore commanded the highest share of the total ASEAN trade. Indeed in 2011, Singapore’s trade was US$775.17 billion, the highest among all the ASEAN member states. Figure 3 shows that Singapore held 32.5% of total ASEAN trade, followed by...
Thailand, Malaysia and Indonesia at 18.9%, 17.4% and 16.0% respectively. The remaining ASEAN members each had less than 10 percent shares.

![Graph showing the share of Member Countries in Total ASEAN Trade in 2011](image)

**Figure 3.** Shares of Member Countries in Total ASEAN Trade in 2011

Singapore’s role as the trading hub of ASEAN is further evident from trade statistics summary compiled in Table 1. Singapore totaled more than one third of total ASEAN trade volume (36.55%) in 2010, which was approximately double Malaysia’s share (18.33%), the number two country. Singapore ranks first among ASEAN members in their combined trade with the following countries: China, the EU, India, USA and Russia. Its percentage share of ASEAN trade volume with other major trading partners, such as Japan, Australia and Canada, are also highly substantial.

These statistics convincingly identify Singapore’s current status as the trading hub of ASEAN. The large share of intra-ASEAN trade in Singapore demonstrates the hub-and-spoke role played by the Singapore Port as the “mother port” for the other regional ports of ASEAN member countries. The large share of Singapore in the total international trade of ASEAN points to Singapore as the main international gateway for ASEAN as a whole, with its key global economic trading partner regions in East Asia, Europe and North America.

In Tables 2 and 3, further trade data are provided, examining the import and export percentage shares of the various ASEAN member countries for the year 2010. Singapore again performs strongly relative to its ASEAN peers in terms of both imports to the region
and exports out of the region. Singapore’s imports from other ASEAN member countries represents 36.55% of the total intra-ASEAN import trade volume between ASEAN member countries. The corresponding figure for Singapore’s share in intra-ASEAN exports is 41.52%. For both import and export trade, Singapore stands ahead of the second highest country by a large margin, particularly for exports, where the next highest country (Malaysia) has a share of 18.8%, less than half of Singapore’s share.

The trade flow data described in the preceding paragraphs pertinently highlight the key characteristics making the Port of Singapore one of the world's most important container transshipment hubs. Indeed about 80% of its container traffic is transshipment (Wang and Meng 2012). The data also convey that the high trade flow volume and port throughput of the Port of Singapore has predominantly been a factor of Southeast Asian trade. While Singapore has benefitted from transshipment business, serving its neighboring Southeast Asian countries, those other Southeast Asian countries have also benefitted from the efficient and cost effective transshipment services of Singapore.

<table>
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<tr>
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Source: Compiled from ASEAN (2011)
Table 2 Country Shares of ASEAN Imports from Main Trade Partners in 2010  
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Source: Compiled from ASEAN (2011)

Table 3 Country Shares of ASEAN Exports to Main Trade Partners in 2010  
(Unit: %)

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Source: Compiled from ASEAN (2011)

4. CHALLENGES TO SINGAPORE AND ASEAN

Singapore’s economy depends heavily on global trade activity and the city-state’s competitiveness in maintaining its role as an international transportation and logistics hub. The position of the Port of Singapore as the regional hub of ASEAN was greatly strengthened in the 1980s and early 1990s when companies from Japan, South Korea and Taiwan began to relocate their manufacturing facilities to Southeast Asia (Trace 1997). The rapid growth of container volume handled by the Port of Singapore, as well as the total
gross tonnage of vessels calling at the port in this period, can be observed in the historical records plotted in Figure 4. The annual container throughput increased by more than 10 times from 1.55 million TEUs in 1985 to 17.09 million TEUs in 2000. The vessel arrivals during the same period increased from 0.264 to 0.910 million gross tonnes.

![Figure 4. Annual Container Throughput and Vessel Arrivals of the Port of Singapore](image)

That significant growth in trade volume has led to the rapid rise of the Port of Singapore in the global ranking of ports by annual container throughput in the late 1980s and 1990s, as depicted in Table 4. The Port of Singapore first made it to the top 10 in this ranking in 1985, and continued rising into the 1990s to claim the second spot in 1995. Singapore further benefitted from the markedly increased China-Europe and China-ASEAN trade associated with China’s emergence economically in the 1990s and 2000s, and became the top port in terms of annual container throughput in early 2000s. These same Chinese development dynamics helped Shanghai overtake Singapore for the top spot in 2010, even while Singapore has still posted strong increases in its annual throughput in recent years.
Table 4 Top 10 Container Ports in the World

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</tbody>
</table>

Although its beneficial geographical location at the southern end of the Strait of Malacca and favorable sea channel and natural coastal conditions have been major contributing factors, the success of the Port of Singapore today owes greatly to Singapore’s historical economic ties with fellow ASEAN member countries. It has in addition been boosted significantly by its efforts to create an efficient pro-business environment, underpinned by a transparent legal and financial framework, a comprehensive system of quality infrastructure in transportation, communications and IT, a high standard of living, and a reliable and productive workforce.

Singapore is ranked second overall by the Global Competitiveness Report 2012-2013, out of 144 global economies (Schwab 2012). It tops the list in public and private institutions, and the efficiency of goods and labor markets, and ranks second in land, sea and air transport infrastructure. In 2007, 2010, and 2012, the World Bank conducted a Logistics Performance Index (LPI) survey to assess the logistics performance of 155 countries (World Bank 2012). The assessment was made based on a country’s performance in the following six areas:

(a) Efficiency of customs clearance process;
(b) Quality of trade and transport related infrastructure;
(c) Ease of arranging competitively priced shipments;
(d) Competence and quality of logistics services;
(e) Ability to track and trace shipments; and
(f) Timeliness of shipping in reaching destination.
Singapore was ranked first in 2007, second in 2010, and back to first place in the 2012 survey. The top position awarded to Singapore in the studies highlights the continuing efforts undertaken by the Singaporean government and its industry stakeholders to continuously maintain and upgrade the island state’s competitiveness.

Singapore’s continued success hinges on its ability to be fully integrated with the entire ASEAN region, and contribute to the further development and growth of the other ASEAN member countries. In the meantime, to continue to serve as an efficient international gateway to ASEAN, the Port of Singapore and Singapore itself must stay competitive and continue to attract international traffic to the region. The Port of Singapore has been able to create and sustain its competitive advantage through continuing investment and innovation to further improve port efficiency and the cost effectiveness of shipping cargo via Singapore. For instance, in 2008 Singapore launched the WISEPORT project to provide the port and maritime community with high bandwidth, low-cost and secured wireless broadband access up to 15 kilometres from Singapore's coastline (MPA 2013). This project has effectively raised Singapore’s port infrastructure to a level unmatched by ports elsewhere. It has also helped to create new development and business opportunities for the maritime and port community.

The WISEPORT project is part of the S$12 million Infocomm@SeaPort Program launched by the Singapore port authority to harness the latest information and communication technologies to further develop the facilities as a leading maritime center (MPA 2013). The Maritime and Port Authority of Singapore (MPA) has also announced its vision to develop Singapore as a global maritime knowledge hub by 2025 (MPA 2013). Centers of excellence in research and development, driven by both academic institutions and the maritime industry, will generate new initiatives that the maritime sector can leverage both technically and commercially. The Singaporean government has committed S$350 million to fund maritime research and development so as to strengthen Singapore’s manpower, research capabilities in the maritime community, and to enhance the overall competitiveness of its maritime sector (SMI 2012).

It is important to stress that Singapore’s competitiveness in the global marketplace is very much linked to the overall competitiveness of the ASEAN region as a whole. A new phase
of strong economic growth for the ASEAN region is expected to take place, with the likely relocation of manufacturing factories from China to ASEAN member countries. To reap the full benefits of these opportunities, ASEAN countries will need to overcome major weaknesses in their logistics sectors. The main weaknesses, according to the 2012 World Bank LPI study (World Bank 2012), are highlighted in Table 5, and plotted in Figure 5 for comparison.

Table 5 World Bank 2012 Logistics Performance Scores of ASEAN Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>LPI Rank</th>
<th>Customs</th>
<th>Infra-structure</th>
<th>International Shipments</th>
<th>Logistics Competence</th>
<th>Tracking/Tracing</th>
<th>Timeliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>1</td>
<td>4.10</td>
<td>4.15</td>
<td>3.99</td>
<td>4.07</td>
<td>4.07</td>
<td>4.39</td>
</tr>
<tr>
<td>Malaysia</td>
<td>26</td>
<td>3.28</td>
<td>3.43</td>
<td>3.40</td>
<td>3.45</td>
<td>3.54</td>
<td>3.86</td>
</tr>
<tr>
<td>Thailand</td>
<td>38</td>
<td>2.96</td>
<td>3.08</td>
<td>3.21</td>
<td>2.98</td>
<td>3.18</td>
<td>3.63</td>
</tr>
<tr>
<td>Philippines</td>
<td>52</td>
<td>2.62</td>
<td>2.80</td>
<td>2.97</td>
<td>3.14</td>
<td>3.30</td>
<td>3.30</td>
</tr>
<tr>
<td>Vietnam</td>
<td>53</td>
<td>2.65</td>
<td>2.68</td>
<td>3.14</td>
<td>2.68</td>
<td>3.16</td>
<td>3.64</td>
</tr>
<tr>
<td>Indonesia</td>
<td>59</td>
<td>2.53</td>
<td>2.54</td>
<td>2.77</td>
<td>2.85</td>
<td>3.12</td>
<td>3.61</td>
</tr>
<tr>
<td>Cambodia</td>
<td>101</td>
<td>2.30</td>
<td>2.20</td>
<td>2.61</td>
<td>2.50</td>
<td>2.77</td>
<td>2.95</td>
</tr>
<tr>
<td>Laos PDR</td>
<td>109</td>
<td>2.38</td>
<td>2.40</td>
<td>2.40</td>
<td>2.49</td>
<td>2.49</td>
<td>2.82</td>
</tr>
<tr>
<td>Myanmar</td>
<td>129</td>
<td>2.24</td>
<td>2.10</td>
<td>2.10</td>
<td>2.42</td>
<td>2.34</td>
<td>2.59</td>
</tr>
</tbody>
</table>

Notes: (1) Brunei was not included in the World Bank study.

(2) Logistics performance scores are based on the scale of 1 (worst) to 5 (best possible).

Figure 5 graphically compares the logistics performance of ASEAN countries against that of Singapore. The radar plot shows that Singapore is currently outperforming its ASEAN neighbors in all six aspects of logistics performance measured by the World Bank. In particular, all ASEAN countries lag significantly behind Singapore in the customs-cleared process, logistics and transport-related infrastructure development, and ease in arranging for international shipments. Inconsistent procedures related to customs inspections, customs clearances, and assessment of duties, as well as inadequate adoption of IT in document processing, have been identified as obstacles to efficient customs clearance in ASEAN countries (ASEAN 2010). Port development in ASEAN countries is unable to meet the pace of economic development and the existing port equipment and facilities are inadequate and low in productivity (Chu et al. 2013). There is also an urgent need for land transport infrastructure development in establishing the necessary road and rail network (ASEAN 2010).
The ASEAN governing body has made plans to address these weaknesses. The Brunei Action Plan 2011-2015 (ASEAN 2010) has outlined strategic goals, actions and milestones for 2011-2015 in the areas of land transport, maritime transport, and transport facilitation. ASEAN has also developed the Master Plan on ASEAN Connectivity (ASEAN 2010) to improve national physical and institutional linkages, and reduce the development gap. It calls for the implementation of an ASEAN Single Shipping Market to promote the free flow of goods. A trade facilitating platform known as the ASEAN Single Window (ASW) has also been proposed, to expedite customs clearance and the release of shipments coming to and departing from ASEAN. With full implementation of these plans, the global competitiveness of ASEAN will be significantly enhanced and it will be well positioned to take advantage of its strategic geographical location and the expected global and regional economic growth.

Figure 5. Logistics Performance of ASEAN Countries

The ASEAN governing body has made plans to address these weaknesses. The Brunei Action Plan 2011-2015 (ASEAN 2010) has outlined strategic goals, actions and milestones for 2011-2015 in the areas of land transport, maritime transport, and transport facilitation. ASEAN has also developed the Master Plan on ASEAN Connectivity (ASEAN 2010) to improve national physical and institutional linkages, and reduce the development gap. It calls for the implementation of an ASEAN Single Shipping Market to promote the free flow of goods. A trade facilitating platform known as the ASEAN Single Window (ASW) has also been proposed, to expedite customs clearance and the release of shipments coming to and departing from ASEAN. With full implementation of these plans, the global competitiveness of ASEAN will be significantly enhanced and it will be well positioned to take advantage of its strategic geographical location and the expected global and regional economic growth.
5. CONCLUSION

Singapore has to date been the key trading hub of ASEAN and a major international port of call for container shipping since the mid-1980s. It has achieved this position through its close economic ties with its fellow ASEAN member countries, and its own efforts to create an efficient pro-business environment supported by a comprehensive infrastructural system. The continued success of Singapore will depend on its ability to be fully integrated with the maturing ASEAN region and contribute to the development and growth of its fellow ASEAN member countries.

There are major challenges to both Singapore and ASEAN as a whole to stay competitive in international trade in the years to come. Most notably, there is a significant gap between the logistics performance of Singapore and its ASEAN neighbors. Major efforts in logistics and transport infrastructure development, upgrading of logistics services and productivity, and elimination of institutional barriers are necessary to reduce the gaps.

6. REFERENCES


Myanmar’s Logistics Infrastructure Development Strategy and ASEAN Logistics Connectivity

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Abstract: The current political, economic and social reforms ongoing in Myanmar have made more urgent the necessity for improvements to the hard infrastructure in all modes of transport, in order to provide more efficient and effective logistics services for the international trade transactions. In this regard, this paper will present the current state the transport sector: road, rail, maritime, and air transport in Myanmar, and the concomitant policies and strategic programs for logistics infrastructure development enhancing these modes of transport. In addition, the master plan on sustainable national transport development in Myanmar will be discussed. Moreover, since logistics plays a vital role in the ASEAN region for the enhancement of its competitive advantages, this paper will also explain transport facilitation initiatives in connection with ASEAN logistics connectivity and how they are being treated by the government of Myanmar.

1. INTRODUCTION

The strategic location of Myanmar, it links the two economic giants of the Asian continent (China and India), as well as South and Southeast Asia, provides several strengths and opportunities to catalyze its transition to a market economy (ADB, 2012). With a strong commitment to political, social, and economic reforms, the government of Myanmar has acknowledged the need to improve connectivity with its neighboring, regional economies by increasing trade and cross-border investment (ADB, 2008). Recognizing the great importance of the nation’s transport network, including sufficient infrastructure for the enlargement of regional and international trade, and enhanced logistics connectivity to
ensure national economic growth, the government has placed strong emphasis on the development of its transport and logistics sectors.

Accordingly, this study aims to scrutinize the strategic plans of transport infrastructure development leading to a provision of reliable and efficient logistics services covering all transport modes including road, rail, maritime, and air. It further intends to explain the transport facilitation initiatives taken thus far by the government of Myanmar for the successful integration of its logistics service into the ASEAN economic community based on the documentary evidence.

2. THE CURRENT STATUS OF THE TRANSPORT SECTOR IN MYANMAR

According to the institutional structure of the government of Myanmar, the Ministry of Transport is responsible for maritime and air transport. Meanwhile, road and rail transport are managed by the Ministry of Rail Transportation. The Ministry of Construction takes charge of the construction and maintenance of roads, bridges, and airfields in the country, and the Ministry of Border Affairs is responsible for the construction and maintenance of roads and bridges in the border areas. However, urban transport operation is implemented by three city-development committees, namely the Naypyitaw City Development Committee, Yangon City Development Committee, and Mandalay City Development Committee.

2.1 Road Transport

Most of the existing roads, and the new roads coming online, are connecting the North part of the country to the South, along the mountain ranges and rivers in Myanmar. Before 1988, the total road length throughout the country was 21,943 km. However, the government has made an effort to improve the road transport infrastructure by laying down the following road-network policies since 1988:

(i) Making a union highway network master plan, constructing and upgrading 36 roads from North to South, and 49 roads from East to West, which will cut across 7 regions and 7 states of the country.
(ii) Giving priority to the development of every region, in order to increase friendship
as well as attempt to reconsolidate the national races
(iii) Facilitating and promoting economic activities, particularly trade and tourism
between Myanmar and foreign countries

Accordingly, the road length has increased to 148,690 km in total as of March 2012. In addition to the efforts of the Ministry of Construction, there has been a coordination of the work of several government organizations as described in Table 2.1 for the successful implementation of the above road network policies. However, the percentage ratio of paved and unpaved road for the whole country, 21% and 79% respectively, highlights that there remains plenty of room for improvement in road transport infrastructure of Myanmar.

Table 2.1 Total Road Length of Myanmar in 2012

<table>
<thead>
<tr>
<th>No.</th>
<th>Organization</th>
<th>Concrete Road (km)</th>
<th>Bituminous Road (km)</th>
<th>Metaled Road (km)</th>
<th>Gravel Road (km)</th>
<th>Earth Road (km)</th>
<th>Mule Road (km)</th>
<th>Total (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Expressway &amp; Highway</td>
<td>611.7</td>
<td>11733.0</td>
<td>2440.8</td>
<td>2700.3</td>
<td>1973.5</td>
<td>44.1</td>
<td>19503.2</td>
</tr>
<tr>
<td>2</td>
<td>Regional &amp; State Roads</td>
<td>49.7</td>
<td>5451.8</td>
<td>3299.6</td>
<td>2941.4</td>
<td>6497.1</td>
<td>1340.0</td>
<td>19579.5</td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td>661.4</td>
<td>17184.8</td>
<td>5740.4</td>
<td>5641.7</td>
<td>8470.6</td>
<td>1384.1</td>
<td>39082.7</td>
</tr>
<tr>
<td>3</td>
<td>Urban Road</td>
<td>6.6</td>
<td>4880.7</td>
<td>2215.5</td>
<td>660.8</td>
<td>3509.0</td>
<td>-</td>
<td>11272.6</td>
</tr>
<tr>
<td>4</td>
<td>Village &amp; Border Road</td>
<td>120.1</td>
<td>4073.0</td>
<td>17041.5</td>
<td>4976.7</td>
<td>5588.5</td>
<td>-</td>
<td>82099.9</td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td>126.7</td>
<td>8953.7</td>
<td>19257.0</td>
<td>5637.5</td>
<td>59397.5</td>
<td>-</td>
<td>93372.5</td>
</tr>
<tr>
<td>5</td>
<td>Yangon City Development Committee</td>
<td>1237.9</td>
<td>1747.5</td>
<td>12.9</td>
<td>454.9</td>
<td>472.9</td>
<td>-</td>
<td>3928.0</td>
</tr>
<tr>
<td>6</td>
<td>Mandalay City Development Committee</td>
<td>10.8</td>
<td>573.4</td>
<td>119.7</td>
<td>-</td>
<td>309.8</td>
<td>-</td>
<td>1013.8</td>
</tr>
<tr>
<td>7</td>
<td>Naypyitaw City Development Committee</td>
<td>246.1</td>
<td>1219.3</td>
<td>43.0</td>
<td>734.9</td>
<td>1130.8</td>
<td>-</td>
<td>2284.1</td>
</tr>
<tr>
<td>8</td>
<td>Directorate of Military Engineers</td>
<td>393.4</td>
<td>61.8</td>
<td>605.3</td>
<td>166.4</td>
<td>6822.7</td>
<td>-</td>
<td>8049.5</td>
</tr>
</tbody>
</table>
Table 2.1 Total Road Length of Myanmar in 2012

<table>
<thead>
<tr>
<th>No.</th>
<th>Organization</th>
<th>Concrete Road (km)</th>
<th>Bituminous Road (km)</th>
<th>Metaled Road (km)</th>
<th>Gravel Road (km)</th>
<th>Earth Road (km)</th>
<th>Mule Road (km)</th>
<th>Total (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Ministry of Electrical Power</td>
<td>48.3</td>
<td>88.5</td>
<td>542.1</td>
<td>-</td>
<td>280.2</td>
<td>-</td>
<td>959.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2726.3</td>
<td>28739.1</td>
<td>26320.4</td>
<td>12635.4</td>
<td>76884.6</td>
<td>1384.0</td>
<td>148689.9</td>
</tr>
</tbody>
</table>

Source: Public Works, Ministry of Construction

2.2 Rail Transport

Myanmar Railways (MR) is the state-owned enterprise that undertakes the rail transport operation throughout the country. MR has also expanded its rail transport network since 1988, with the intention of socio-economic development in the remote areas. At present, the total length of the rail network, including single lane and double lane track running to various regions of the country, is 5,878.14 km, compared with a total track length of 7,693.44 km nationwide. In addition, MR has the aim to improve the railway service for container transport as an effective and efficient driver of the logistics system, leading to the development of multimodal transport serving regional and international trade transactions. According to MR statistics, the fleet of locomotives, rail buses, passenger coaches, and freight wagons currently engaging in the operation of rail transport all over the country is not sufficient for fulfilling the higher demand. The existing volume of passenger and freight traffic in rail transport is shown in Table 2.2.
Table 2.2 Rail Transport Traffic Volume: Passenger and Freight

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Passengers (in millions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main</td>
<td>36.731</td>
<td>34.587</td>
<td>33.741</td>
<td>34.102</td>
<td>31.246</td>
<td>23.532</td>
</tr>
<tr>
<td>Suburban</td>
<td>39.228</td>
<td>38.974</td>
<td>37.861</td>
<td>33.548</td>
<td>33.106</td>
<td>30.326</td>
</tr>
<tr>
<td>Total</td>
<td>75.959</td>
<td>73.561</td>
<td>71.602</td>
<td>67.650</td>
<td>64.352</td>
<td>53.858</td>
</tr>
<tr>
<td>Passenger/Day</td>
<td>0.210</td>
<td>0.200</td>
<td>0.200</td>
<td>0.190</td>
<td>0.180</td>
<td>0.148</td>
</tr>
<tr>
<td>Passenger Mile (in 100 million)</td>
<td>33.784</td>
<td>33.489</td>
<td>33.376</td>
<td>33.287</td>
<td>31.428</td>
<td>23.867</td>
</tr>
<tr>
<td>Ton Carried (in millions)</td>
<td>2.930</td>
<td>2.950</td>
<td>3.330</td>
<td>3.410</td>
<td>3.580</td>
<td>2.850</td>
</tr>
<tr>
<td>Ton Miles (in 10 million)</td>
<td>53.540</td>
<td>56.990</td>
<td>65.830</td>
<td>69.780</td>
<td>72.270</td>
<td>60.304</td>
</tr>
<tr>
<td>Average Lead Miles/Ton</td>
<td>182</td>
<td>193</td>
<td>198</td>
<td>205</td>
<td>200</td>
<td>210</td>
</tr>
</tbody>
</table>

Source: Myanmar Railways

2.3 Maritime Transport

In the maritime transport subsector, the Myanmar Port Authority (MPA), Myanmar Inland Water Transport (MIWT) and Myanmar Shipyards organizations play a major role in facilitating both the sea and river transportation of the country. Yangon Port is the premier port of Myanmar, which handles about 90% of seaborne trade of the country as a river port. There are also 8 other coastal ports, known as outports, along the coast of Myanmar. In the Yangon port area, there are 3 inland container depots (ICD) and 18 international wharves operated at Bo AungKyaw Street Wharf (BSW), Hteedan Port Terminal (HPT), Sule Pagoda Wharf (SPW), Myanmar Industrial Port (MIP), Asia World Port Terminal (AWPT), and the Hteedan Oil Berth (HOB). Further, there are also 6 international wharves in the Thilawa port area, which are managed by the Myanmar International Terminal Thilawa (MITT) and Myanmar Integrated Port Limited (MIPL). Detailed information on the current facilities of these international wharves is provided in Table 2.3. Among the stated terminals, AWPT, MIP, MITT and MIPL are operating under foreign port management companies, by way of a BOT investment scheme. According to the MPA, the volume of general cargo and containers handled in Yangon port continues to increase year by year and it is necessary to prepare for potential larger trade flows resulting from the current reforms of the government.
Table 2.3 Facilities of International Wharves

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Type of Terminals</th>
<th>Quay Length (meter)</th>
<th>Apron Width (meter)</th>
<th>Vessel DWT</th>
<th>Back Up Area (acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SPW (1)</td>
<td>GC</td>
<td>137</td>
<td>12.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SPW (2)</td>
<td>GC</td>
<td>137</td>
<td>12.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SPW (3)</td>
<td>GC</td>
<td>137</td>
<td>12.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SPW (4)</td>
<td>GC</td>
<td>137</td>
<td>12.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>SPW (5)</td>
<td>GC</td>
<td>168</td>
<td>15.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>SPW (6)</td>
<td>GC</td>
<td>162</td>
<td>15.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SPW (7)</td>
<td>GC</td>
<td>162</td>
<td>15.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>BSW (1)</td>
<td>GC/Container</td>
<td>137</td>
<td>15.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>BSW (2)</td>
<td>GC/Container</td>
<td>137</td>
<td>15.2</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>BSW (3)</td>
<td>GC/Container</td>
<td>183</td>
<td>30.0</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>AWPT (1)</td>
<td>GC/Container</td>
<td>198</td>
<td>30.5</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>AWPT (2)</td>
<td>GC/Container</td>
<td>156</td>
<td>19.5</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>AWPT (3)</td>
<td>GC/Container</td>
<td>260</td>
<td>30.5</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>MIP (1)</td>
<td>GC/Container</td>
<td>155</td>
<td>18.0</td>
<td>12000</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>MIP (2)</td>
<td>GC/Container</td>
<td>155</td>
<td>18.0</td>
<td>12000</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>HOB</td>
<td>Edible Oil</td>
<td>120</td>
<td>15.0</td>
<td>5000</td>
<td>0.88</td>
</tr>
<tr>
<td>17</td>
<td>HPT (2)</td>
<td>GC/Container</td>
<td>213</td>
<td>30.0</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>HPT (3)</td>
<td>GC/Container</td>
<td>213</td>
<td>30.0</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>MITT (1)</td>
<td>GC/Container</td>
<td>200</td>
<td>30.0</td>
<td>20000</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>MITT (2)</td>
<td>GC/Container</td>
<td>200</td>
<td>30.0</td>
<td>20000</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>MITT (3)</td>
<td>GC/Container</td>
<td>200</td>
<td>30.0</td>
<td>20000</td>
<td>185</td>
</tr>
<tr>
<td>22</td>
<td>MITT (4)</td>
<td>GC/Container</td>
<td>200</td>
<td>30.0</td>
<td>20000</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>MITT (5)</td>
<td>GC/Container</td>
<td>200</td>
<td>30.0</td>
<td>20000</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>MIPL</td>
<td>GC/Liquid bulk</td>
<td>200</td>
<td>17.0</td>
<td>20000</td>
<td>37</td>
</tr>
</tbody>
</table>

Source: Myanmar Port Authority

As a state-owned enterprise for serving inland river transportation, Myanmar Inland Water Transport (MIWT) is making an effort to optimize its transport performance for public needs. MIWT is currently operating passenger and cargo transportation services along the navigable waterways of the country. MIWT also operates the ferry services at major river crossing points for the transportation of vehicles. According to MIWT statistics, there are a total of 38 service routes for inland water transport, together with 218 domestic waterways ports throughout the country. The total service route mileage is 7,482. However, there have
not yet been terminals established for container handling services for inland water transport in Myanmar.

### 2.4 Air Transport

As a regulatory body, the Department of Civil Aviation (DCA) controls air transport operations in Myanmar. The air transport service is currently being provided in 33 airports throughout the country. Among them, three airports: (i) Yangon International Airport with passenger handling capacity of 2.7 million, (ii) Mandalay International Airport with 3 million, and (iii) Naypyitaw International Airport with 3.5 million are operated as international air ports, while the others serve as domestic airports. Today, there are 7 domestic airlines in Myanmar which provide air transport services in 27 domestic airports. Meanwhile, Myanmar Airways International (MAI), Golden Myanmar Airlines and Air Bagan are operating international scheduled services between Myanmar and some regional destinations. There are also a number of foreign airlines involved in the air transport industry of Myanmar, and the international air routes operated by these foreign airlines are described in Table 2.4.

<table>
<thead>
<tr>
<th>Foreign Airlines</th>
<th>Air Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thai Airways International, Bangkok Airways</td>
<td>Bangkok-Yangon</td>
</tr>
<tr>
<td>Thai Air Asia</td>
<td>Bangkok-Yangon, Bangkok-Mandalay</td>
</tr>
<tr>
<td>Malaysia Airlines, Air Asia Berhad</td>
<td>Kuala Lumpur-Yangon</td>
</tr>
<tr>
<td>Silk Air, Jet Star Asia, Singapore Airlines</td>
<td>Singapore-Yangon</td>
</tr>
<tr>
<td>Air China</td>
<td>Kunming-Yangon</td>
</tr>
<tr>
<td>China Eastern Airlines</td>
<td>Kunming-Yangon, Nanning-Yangon</td>
</tr>
<tr>
<td>China Southern Airlines</td>
<td>Guangzhou-Yangon</td>
</tr>
<tr>
<td>China Airlines</td>
<td>Taipei-Yangon (Regular Charter)</td>
</tr>
<tr>
<td>Vietnam Airlines</td>
<td>Ha Noi-Yangon, Ho Chi Minh-Yangon</td>
</tr>
<tr>
<td>Indian Airlines</td>
<td>Kolkata-Yangon</td>
</tr>
<tr>
<td>Korean Air</td>
<td>Inchon-Yangon</td>
</tr>
</tbody>
</table>
Table 2.4. International Air Routes Operated by Foreign Airlines

<table>
<thead>
<tr>
<th>Foreign Airlines</th>
<th>Air Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eva Air</td>
<td>Taipei-Yangon</td>
</tr>
<tr>
<td>Qatar Airways</td>
<td>Dohar-Yangon</td>
</tr>
</tbody>
</table>

Source: Department of Civil Aviation

According to DAC statistics, inbound and outbound international and domestic passenger traffic passing through Yangon International Airport has been increasing year by year as described in Figure 2.1. In 2012, international passenger traffic reached 1.92 million passengers, an increase of 32.9% from the 2011 figure, and domestic passenger traffic of 1.13 million passengers represents an increase of 14.12% from 2011. However, there has not been substantial cargo traffic in the air transport sector of Myanmar until recently, due to the lack of sufficient infrastructure and freighter flights to support air cargo services. At present, air cargo handling and warehousing services are being provided by Mingalardon Cargo Service Co., Ltd. (MCS), under a BOT contract scheme.

![Passenger Traffic in Yangon International Airport](image)

**Figure 2.1. Passenger Traffic in Yangon International Airport**

Source: Department of Civil Aviation

3. MYANMAR’S LOGISTICS INFRASTRUCTURE DEVELOPMENT STRATEGY

Since transport infrastructure and its concomitant network are essential for freight movements and logistics, the government of Myanmar has placed great emphasis on the development of physical infrastructure in all modes of transport - road, rail, maritime, and air.
3.1 Strategic Plan for the Development of Road Transport Infrastructure

For logistics-related road infrastructure development in Myanmar, there are a number of projects to be implemented under the regional development programs. These projects mainly include: (i) Asian Highways, (ii) ASEAN Highways, (iii) GMS Economic Corridors, and (iv) road connectivity with neighboring countries. Some projects are being carried out with the financial aid of UNESCAP, ADB and JICA. Others are implemented under BOT contracts in line with the public-private partnership (PPP) scheme. The routes and associated lengths of roads which have been or will be built in Myanmar, for linking up with international road networks, are described in Table 3.1.

<table>
<thead>
<tr>
<th>No.</th>
<th>Project/Route</th>
<th>Length (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Asia Highways</strong></td>
<td></td>
</tr>
<tr>
<td>AH1</td>
<td>Myawaddy-Yangon-Mandalay-Tamu</td>
<td>1650</td>
</tr>
<tr>
<td>AH2</td>
<td>Tachileik-Meikhtila-Tamu</td>
<td>807</td>
</tr>
<tr>
<td>AH3</td>
<td>Mongla-Kyaingtong</td>
<td>93</td>
</tr>
<tr>
<td>AH14</td>
<td>Muse-Mandalay</td>
<td>453</td>
</tr>
<tr>
<td></td>
<td><strong>Total Length (km)</strong></td>
<td><strong>3003</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ASEAN Highways</strong></td>
<td></td>
</tr>
<tr>
<td>AH1</td>
<td>Tamu-Mandalay-Meikhtila-Yangon-Bago-Phayargyi-Thaton-Myawaddy</td>
<td>1656</td>
</tr>
<tr>
<td>AH2</td>
<td>Meikhtila-Loilem-Kyaingtong-Tachileik</td>
<td>807</td>
</tr>
<tr>
<td>AH3</td>
<td>Mongla-Kyaingtong</td>
<td>93</td>
</tr>
<tr>
<td>AH14</td>
<td>Mandalay-Thibaw-Muse</td>
<td>453</td>
</tr>
<tr>
<td>AH111</td>
<td>Thibaw-Loilem</td>
<td>239</td>
</tr>
<tr>
<td>AH112</td>
<td>Thaton-Mawlamyine-Thanbyuzayat-Ye-Dawei-Lehnya-Khamaukgyi</td>
<td>1145</td>
</tr>
<tr>
<td>AH123</td>
<td>Dawei-Maesamee Pass</td>
<td>141</td>
</tr>
<tr>
<td></td>
<td><strong>Total Length (km)</strong></td>
<td><strong>4534</strong></td>
</tr>
<tr>
<td>I</td>
<td><strong>GMS North-South Economic Corridor</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td> Mongla-Kyaingtong-Tachileik (completed)</td>
<td>257</td>
</tr>
<tr>
<td>II</td>
<td><strong>GMS East-West Economic Corridor</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td> In progress</td>
<td>201</td>
</tr>
<tr>
<td>III</td>
<td><strong>GMS Southern Economic Corridor</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GMS Southern Economic Corridor (Vietnam-Cambodia-Thailand-Myanmar)</td>
<td>140</td>
</tr>
</tbody>
</table>
Table 3.1 Regional Highway Projects and Route Sections Implemented in Myanmar

<table>
<thead>
<tr>
<th>No.</th>
<th>Project/Route</th>
<th>Length (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>GMS Northern Economic Corridor (China-Myanmar-India)</td>
<td>603</td>
</tr>
<tr>
<td></td>
<td>Kunming-Ruili-Muse-Mandalay-Tamu (completed)</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>GMS Western Economic Corridor (India-Myanmar-Thailand)</td>
<td>1360</td>
</tr>
<tr>
<td></td>
<td>Tamu-Mawlamyine (completed)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Public Work, Ministry of Construction.

The road connectivity of Myanmar with neighboring countries under the bilateral agreements is now an ongoing process, details of which are provided below:

- Connectivity with China: Establishing the Ruili (China) to Kyaukpyu (Myanmar) Corridor
- Connectivity with India: (i) Construction of the Tamu-Kalay-Kalaywa Road, (ii) Rehabilitation of Kalay-Tamu Road including upgrade of 70 bridges to RC standard, (iii) Upgrading the Tiddim-Rhi Road in the Chin state of Myanmar, and (iv) Construction of the Maritwa-Satpyitpyin-Paletwa-Kalaywa Road under the Kaladan Multimodal Project
- Connectivity with Lao PDR: Establishing the Myanmar-Laos Friendship Bridge (722 m)
- Connectivity with Thailand: (i) Establishing the 2nd Thailand-Myanmar Friendship Bridge, (ii) Upgrading the Myawaddy-Thingannyaung Road in the Kayin state of Myanmar, (iii) Construction of the Thingannyaung-Kawkareik Road in the Kayin state of Myanmar, and (iv) Construction of the road link between Myanmar’s Dawei SEZ in Tanintharyi region and Phunamron in Thailand.

In addition to the road construction, upgrades and maintenance projects in various regions throughout the country, there are also a number of proposed projects for new bridge construction to be carried out in the future in order to meet the international norms and standards of logistics services in relation to the carriage of goods. The proposed list consists of 16 new bridges to be constructed throughout the country, with an additional 21 old bridges being proposed for rehabilitation.
### 3.2 Strategic Plan for the Development of Rail Transport Infrastructure

Being a vital tool for improvements of political, social and economic status in the remote areas, the government of Myanmar has made a strategic effort to implement a number of short-term and long-term projects which will reinforce the rail transport subsector by fulfilling the requirements of reliable and efficient rail transport service and also developing rail-related logistics infrastructure. Most of the projects focus on the construction and upgrade of rail line and track, increasing the number of passenger coaches and locomotives, and the installation of an IT system for monitoring traffic. Moreover, in-line with the national transport strategy to accelerate Myanmar's regional integration, feasibility studies are being conducted on several cross-border railways connections between Myanmar and neighboring countries, including China, India, and Thailand. Building such rail connections is intended to facilitate the commodity flow of border trades. Myanmar also has a plan to strengthen its ties with integrated rail-freight transport networks such as Trans-Asian Railways and Pan-Asian Trunk Railways.

### 3.3 Strategic Plan for the Development of Maritime Transport Infrastructure

In accordance with the economic reforms, the Myanmar government has made a plan to develop the Yangon inner-harbor area, principally to provide sufficient infrastructure to handle the larger volume of cargo of various types in the future. A number of implementation efforts are underway in this regard. These include: (i) expansion of the back-up area of Botataung foreshore, by constructing revetment and reclamation where there is a project to establish recreational and commercial buildings on the premises, (ii) upgrading the Nanthidar and Pansodan-Dala passenger jetties to be a modern passenger terminal, as well as constructing modernized commercial buildings in the back-up area, (iii) upgrading and renovating the Sule Wharves as a multi-purpose terminal to accommodate international general and container cargo vessels, (iv) upgrading the local jetties as international inland port terminals, and (v) constructing modernized commercial buildings in the Lanmadaw foreshore area between Ywarthit creek and Sintoodan Jetty.

Secondly, Thilawa port area, which is about 16 km downstream of Yangon Port, has been earmarked to carry out the port expansion for the enhancement of higher cargo throughput.
Hence, a projected port development scheme together with a special economic zone in the Thilawa area has been implemented by foreign and local investors, following BOT terms for the joint venture. To cope with the growth of seaborne cargo traffic and to lessen logistics costs in maritime trade by providing accessibility for bigger vessels to be called at Yangon and Thilawa ports, MPA is now making an increased effort to improve Yangon river channel access based upon the existing conditions.

Since all existing ports of Myanmar are river ports and not deep enough for larger conventional and container vessels, the government has taken the initiative to develop deep sea commercial ports at suitable sites along the coast of Myanmar. This includes three deep sea port projects to be implemented in Myanmar: (i) Kyaukphyu Deep Sea Port in the Rakhine state on the West coast, (ii) Kalagauk Deep Sea Port between Mawlamyine and Ye region on the South coast, and (iii) Dawei Special Economic Zone together with Deep Sea Port in the Tanintharyi region on the South coast. These deep sea port projects can be summarized in Table 3.2. In addition to the development of infrastructure for seaborne trade, in accordance with the national maritime transport development plan, priority is also given to the development of inland water transport which is of critical importance to fostering a multimodal transport system and providing reliable and efficient maritime related logistics services. The detailed plan, which is designed to be implemented between 2011-2012 and 2015-2016, is presented in Table 3.3
<table>
<thead>
<tr>
<th></th>
<th>Kyaukphyu Deep Sea Port</th>
<th>Kalagauk Deep Sea Port</th>
<th>Dawei Deep Sea Port</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Made Island, 11.2 km S/E of Kyaukpyu</td>
<td>Between Mawlamyine and Ye in Mon State</td>
<td>Lies at Nabule area, North-West of Dawei City</td>
</tr>
<tr>
<td><strong>Approach channel</strong></td>
<td>LAD 24 m, Tidal Range 2~2.7 m</td>
<td>LAD 15 m, Tidal Range 3~5 m</td>
<td>LAD 15 m, Tide Range 5 m</td>
</tr>
<tr>
<td><strong>Harbor area</strong></td>
<td>LAD 20 m, Sea Room 1000m~1600 m</td>
<td>LAD 18 m, Sea Room 4.8 km</td>
<td>LAD 15 m, Sea Room 3.2 km</td>
</tr>
<tr>
<td><strong>Prosperity</strong></td>
<td>(i) Most appropriate approach to tie western corridor</td>
<td>(i)The West-East Economic Corridor Working Group has identified the development of the deep sea port, supporting with industrial estate at Kalagauk area, where it was stretched and covered between Mawlamyine and Ye coast line in Mon State</td>
<td>(i) Dawei area will become a hub of GMS, South and South East Asia countries</td>
</tr>
<tr>
<td></td>
<td>(ii) Saving sailing distance about 5000 km comparing with existing sea route through Malacca Strait to China East Coast</td>
<td>(ii) The route of West-East Economic Corridor (WEC) will act as land bridge linking Indian and Pacific Oceans, and cutting the distance of conventional circuitous sea route passing the Malacca Strait by almost two thirds</td>
<td>(ii) The project will provide a competitive advantage as a communication link with direct access from GMS countries and China to the Andaman Sea and India Ocean for the transportation of goods</td>
</tr>
<tr>
<td></td>
<td>(iii) Main outlet of ocean route for land locked regions’ trade</td>
<td>(iii) The project will certainly benefit the countries along the corridor such as Vietnam, Lao, Cambodia, Thailand, and China as well</td>
<td>(iii) The project will consist of a number of businesses such as industry, tourism, fisheries, mining, and energy</td>
</tr>
<tr>
<td></td>
<td>(iv) Opportunity for transporting container, general cargo, crude oil, and gas</td>
<td>(iv) This deep sea port will serve as a gate way of WEC on the west side</td>
<td><strong>Scope of Project</strong></td>
</tr>
<tr>
<td></td>
<td>(v) Shortest trade route from India to China</td>
<td></td>
<td>The project will cover deep sea port, ship yard, industrial estate, petrochemical complex, oil refinery plant, steel mill, fertilizer plant, power plant, road and rail link to Thailand, oil and gas pipeline.</td>
</tr>
</tbody>
</table>

Source: Myanmar Port Authority
Table 3.3 Inland Water Transport Development Plan

<table>
<thead>
<tr>
<th>Target</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of water resources and waterways</td>
<td>(i) Maintenance of Ayeyarwaddy and Chindwin rivers</td>
</tr>
<tr>
<td>Development of inland water transport</td>
<td>(ii) Multidimensional development of Ayeyarwaddy river</td>
</tr>
<tr>
<td></td>
<td>(i) Purchasing 37 new vessels</td>
</tr>
<tr>
<td></td>
<td>(ii) Upgrading the Dala Dockyard</td>
</tr>
<tr>
<td></td>
<td>(iii) Fulfilling 3 ferries for Pansoedan-Dala Ferry Line</td>
</tr>
<tr>
<td></td>
<td>(iv) Establishing/Upgrading six domestic ports along the Ayeyarwaddy and Chindwin rivers</td>
</tr>
<tr>
<td>Installation of navigation equipments</td>
<td>Installing signals, buoys, GPSs, radios, telecommunication systems, and modern tools</td>
</tr>
</tbody>
</table>

Source: Myanmar Inland Water Transport

Furthermore, there are some projects to be undertaken over the long term for the sustainable development of inland water transport. These include: (i) replacement of hovercraft and passenger vessels as well as modern cargo handling equipment, (ii) installation of barges which can carry 1000 tons and above, (iii) conducting freight transport agency services with warehouse facilities, (iv) establishment of container ports, yards, and hubs in the ports of Yangon and Mandalay, (v) installation of container crane barges to support the multimodal transport operation in the future, (vi) supplementing the coastal container fleet according to the vision of the potential flow of goods after the completion of the Dawei and Kyaukphyu deep seaports, and (vii) upgrading existing dockyards.

3.4 Strategic Plan for the Development of Air Transport Infrastructure

The prevailing political, social and economic reforms of Myanmar have encouraged the air transport subsector to: (i) update aviation related Acts and Rules, (ii) set up an Airport Authority, (iii) cooperate with international organizations, (iv) promote technology and develop human resources, (v) improve and upgrade the existing international and domestic airports in the short term, starting from 2011-2012 to 2015-2016, in order to meet international standards and requirements. The strategy of allowing foreign investment in the aviation subsector will be a strong driver for the development of logistics-related air
transport infrastructure. The public-private partnership (PPP) scheme will also be deployed for the implementation of the airport development plan, as stated in Table 3.4.

Table 3.4 Airport Development Plan

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hantharwaddy International Airport (New Construction)</td>
<td>To be the major gateway, meeting international standards and requirements, and fulfilling the demand capacity in 2030</td>
</tr>
<tr>
<td>Yangon International Airport</td>
<td>To be an airport which has a passenger handling capacity of 5.5 million</td>
</tr>
<tr>
<td>Mandalay International Airport</td>
<td>To be a major logistics hub in the region</td>
</tr>
<tr>
<td>Dawei Airport</td>
<td>Upgrading domestic airport to the international airport</td>
</tr>
<tr>
<td>Thandwe Airport</td>
<td>Upgrading terminal and related facilities</td>
</tr>
<tr>
<td>Nyaung U Airport</td>
<td>Upgrading terminal and related facilities</td>
</tr>
<tr>
<td>Heho Airport</td>
<td>Upgrading terminal and related facilities</td>
</tr>
<tr>
<td>All airports</td>
<td>Environmental impact assessment</td>
</tr>
</tbody>
</table>

Source: Department of Civil Aviation.

4. MYANMAR'S TRANSPORT FACILITATION INITIATIVES IN CONNECTION WITH ASEAN LOGISTICS CONNECTIVITY

It has been acknowledged that transport facilitation initiatives of the government of Myanmar are essential for the integration of its improved logistics service into the incoming ASEAN logistics network for ensuring the associated regional competitive advantages.

4.1 Foreign Direct Investment in Transport Infrastructure

Foreign direct investment (FDI) in transport infrastructure is of critical importance to the development of the transport sector in Myanmar. Foreign investment at 100% is allowed by the Myanmar Foreign Investment Law (FIL), which was first promulgated in 1988. In accordance with the FIL, Myanmar Investment Commission (MIC) has been formed to issue an MIC permit to foreign investors after reviewing investment proposals. However, the 1988 FIL was repealed by the New Foreign Investment Law on 2 November, 2012.
Investors under the 1988 FIL continue to be governed by the terms and conditions in their existing MIC permit and relevant agreement until the date it expires. Those investors can get a number of benefits from their MIC permit including: (i) the ability to engage in services or industrial companies, (ii) the ability to obtain import/export registration and licenses, (iii) the ability to get tax and foreign exchange benefits, and (iv) the ability to obtain a long-term lease on commercial property. Under the New Foreign Investment Law, foreign investments are further allowed, provided they meet the specific conditions of benefiting the State and people.

4.2 Legal Framework of Operating Logistics Services in Relation to Transport

Foreign investors, in addition to Myanmar citizens, are allowed to establish logistics services relating to transport in Myanmar, in the form of joint ventures with the State or citizens under the Myanmar Foreign Investment Law. The other acts and laws, such as the Myanmar Registration of Ships Act, Bills of Lading Act (1856), Carriers Act (1865), Yangon Port Act (1905), Ports Act (1905), Out Ports Act (1914), Inland Steam Vessels Act (1917), Myanmar Merchant Shipping Act (1923), Myanmar Carriage of Goods by Sea Act (1925), Myanmar Lighthouse Act (1937), Maritime Navigation Treaties Act (1952), and Maritime Administration Act (1952) are also applicable to the logistics and shipping related operations. Additionally, the Multimodal Transport Law is currently being drafted.

4.3 Harmonization of Customs Regulations with Logistics Service

The Customs Department under the Ministry of Finance and Revenue is one of the major players in enhancing transport facilitation, ultimately for the benefit of integrated logistics services. The customs clearances of imported and exported goods are processed under the respective customs declarations together with necessary documents as described in Table 4.1. In order to provide the customs services effectively, the document processing programs were installed in the Customs Department on 26 April, 2013. The Customs Department of Myanmar complies fully with the system of the World Customs Organization (WCO-1992, 1996) on customs tariffs. Moreover, the basic principles of the national valuation system are in compliance with the prescribed acts and laws, including the Sea Customs Act (1878), the Land Customs Act (1924), and the Tariff Law (1992).
above-mentioned Acts and Law are further applied in taxation. In accordance with the Myanmar Special Economic Zone Law enacted on 27 January, 2011, the Customs Department will apply its control procedures on Free Zones (FZ) and Special Economic Zones (SEZ) to carry out one-stop declaration, one-stop document inspection, and one-stop goods inspection within the shortest possible time.

### Table 4.1 Requirements for Import and Export Customs Clearance

<table>
<thead>
<tr>
<th>Import Clearance</th>
<th>Export Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Import license (from the Ministry of Commerce)</td>
<td>(a) Export License (from the Ministry of Commerce)</td>
</tr>
<tr>
<td>(b) Invoice</td>
<td>(b) Sale contract/Letter of credit</td>
</tr>
<tr>
<td>(c) Packing list</td>
<td>(c) Invoice</td>
</tr>
<tr>
<td>(d) Airway bill/ Bill of lading</td>
<td>(d) Sample</td>
</tr>
<tr>
<td>(e) Letter of Credit</td>
<td>(e) Packing list</td>
</tr>
<tr>
<td>(f) Recommendation from the department concerned (if necessary)</td>
<td>(f) Airway bill/ Bill of lading</td>
</tr>
<tr>
<td></td>
<td>(g) Other related documents from the department concerned (if necessary)</td>
</tr>
</tbody>
</table>

Source: Myanmar Customs Department

### 4.4 Strategy of Developing Logistics Sector

Since logistics is one of the 12 priority sectors of ASEAN integration in order to establish the ASEAN Economic Community by 2015 (Wattanapruttipaisan, 2008), the Ministry of Transport has paid great attention to the development of the logistics sector in Myanmar. The National Level Workshop on Economic Development through the Integration of Logistics Services was held in Naypyitaw in 2008 and consequently has produced the following outcomes: (i) organizing the Consultative Committee, (ii) forming the National Logistics Development Committee, and (iii) establishing the National Logistics Association. In order to formulate the policies, time frame, and action plans for logistics sector development, five consultative committees have been formed, consisting of (i) infrastructure development, (ii) transport services development, (iii) laws, rules, and regulations, (iv) human resource development, and (v) IT development. The logistics-related cooperation and coordination work is being undertaken by these committees to
implement the measures under the roadmap for integrating logistics services of ASEAN countries.

5. CONCLUSION

This study scrutinized the current status of Myanmar’s transport sector, highlighting the need for the development of the hard infrastructure which is necessary for the increasing trade volume and the subsequent economic growth of the nation. Then, the infrastructure development plans to be implemented in the short-term and long-term in every transport mode were thoroughly presented. The transport facilitation initiatives mentioned in this study are expected to support the smooth flow of trade as well as the improvement of logistics services and contribute to the great enhancement of ASEAN logistics connectivity in the near future.

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The Role of Archipelagic Countries in ASEAN Logistics Connectivity

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Abstract: ASEAN logistics connectivity is a primary and necessary factor to take advantage of the economic benefits of the ASEAN single market. The area of ASEAN consists of archipelagic countries such as Indonesia, the Philippines, and Malaysia, which are connected by sea; insufficient ASEAN logistics connectivity, and in particular poor connectivity in the archipelagic parts of the region, could become a major barrier that prohibits member countries from realizing the full potential benefits posed by the ASEAN Economic Community. This paper aims at disclosing the challenges in connecting the archipelagic countries with other member countries and proposes action plans to overcome these logistics challenges. This study is focused on Indonesia, based on secondary data and interviews that attempt to address the issues of archipelagic countries in supporting ASEAN logistics connectivity. A key finding is that an archipelagic logistics chain is needed to link regional logistics capabilities to sufficiently promote economic and social development that will contribute to sustainable economic growth.

Keywords: archipelagic logistics, ASEAN logistics connectivity, Indonesia, ASEAN economic community

1. INTRODUCTION

As one of the three main pillars of the ASEAN Community set forth to be established by 2015, the ASEAN Economic Community (AEC) has been designed with the objective of making the regional ASEAN economy better equipped to be able to compete with countries and regions whose economies are more advanced. Effective January 1, 2016, the union of ten ASEAN countries with 608 million people plus six gigantic partner countries
will have a significant influence in the global marketplace because the combined population of these countries (ASEAN plus the six partner countries) will be approximately 3.3 billion people. The commencement of a “single market” in the AEC will encourage and facilitate trade in the region. Each member country will reduce tariffs, harmonize trading regulations and facilitate trade of both goods and services. For example, the tariffs of food and farm products will be zero percent. This rate will also be applied to the dialogue partner countries that have free trade agreements with ASEAN, such as China and Japan.

The debate over the readiness of the AEC in 2015 is getting hot (Gupta et al., 2011; Pushpanathan, 2011). The direction of the debate, however, is often misguided, as there are more questions than just the matter of readiness. The more important questions are about the preparation in realizing the shared benefits to be instituted by the commencement of the AEC. The realization of this union can establish a more strategic position for ASEAN in the international arena despite conflicts between member countries, on display prominently in the efforts to integrate logistics infrastructure and services between countries. Since most of the ASEAN countries are island countries, the improvement of the flow of goods between countries should be focused on archipelagic logistics. It is logical that logistics services should be prioritized to ensure the facilitation of international trade among the countries.

Archipelagic trade logistics requires serious cooperation among the nations involved to ensure every country both contributes to and benefits from the economic advantages afforded by the strategic geographic position of ASEAN and its associated trade lanes. Each country has significant potential to be realized and thus all parties should commence inter-sector dialogues between nations to ensure a common ground can be reached that will be complementary to each individual nation’s unique situation. Therefore, the purpose of this paper is to review the challenges in connecting archipelagic countries logistically and to present actions to be taken to overcome these challenges. The main focus of this paper is not only to cover the supporting and inhibiting factors, but also to discuss how Indonesia can prepare for and benefit from ASEAN logistics connectivity.
The section that follows will discuss the objectives and scope of the ideal conditions to be achieved for archipelagic southeast Asia; following that, the next section will discuss the research methodology to uncover the challenges faced and the ways to overcome them. Finally, this paper will conclude with a discussion and integration of the overall findings.

2. ARCHIPELAGIC SOUTH EAST ASIA

The AEC, popularly known as the ASEAN single market, was created to integrate the economies of the ASEAN member countries. AEC, which will be enacted in 2015, has the strategic initiative of encouraging economic growth in Southeast Asia. Currently, the average rate of economic growth of ASEAN member countries is 5.5%, and ASEAN has a population of 608 million people, which represents both a new potential market for regional and global players and a large potential labor force. AEC has prepared a blueprint that focuses on the establishment of a single market and production base, a highly competitive economic region, a region with equitable development, and a region that is fully integrated with the global economy. This integration should be aimed at facilitating all ASEAN members to achieve positive and continuous growth.

Within the ASEAN Framework Agreement on Services (AFAS) signed on December 15, 1995 in Bangkok, there are eight priority sectors agreed upon for trade liberalization, namely: the air and sea freight sector, business services sector, construction services sector, telecommunication services sector, tourism services sector, the financial services sector, health services sector, and the logistics services sector. As for the liberalization of the services sector, it is targeted to be comprehensively commenced in 2015. In July 2003, ASEAN economic ministers identified eleven priority sectors, of which four are services sectors, such as air travel, e-ASEAN, healthcare, and tourism. During the 37th ASEAN Economic Ministers’ Meeting (AEM) in Vientiane in September 2005, the ministers agreed to develop a roadmap for economic integration, with detailed and specific measures to be implemented from 2005 to 2010, with active involvement from the private sector. The 12th priority sector, logistics services, was first included in 2006. ASEAN commitment to fully liberalize the 29 priority integration sectors will be done by the end of 2010, a further 9 logistics services sectors by 2013, and the other services sectors by the end of 2015.
The roadmap for the Integration of Logistics Services was endorsed by the 39th ASEAN Economic Ministers Meeting on 24 August 2007 in Makati City, the Philippines. It contains specific measures formulated in consultation with both government and business sector stakeholders. The objective of the logistics roadmap is to create an ASEAN single market by 2015 by strengthening ASEAN economic integration, through liberalization and facilitation measures in the area of logistics services, and to support the establishment and enhancement of the competitiveness of an ASEAN production base through the creation of an integrated ASEAN logistics environment.

The major policies for the logistics roadmap are (a) to encourage the integration of the ASEAN National Logistics Systems (by increasing communications at the regional level to identify actions in the logistics sector to support and facilitate trade flows between ASEAN Member Countries); (b) to encourage the progressive liberalization of logistics services (to make them better able to respond to the opportunities available through ASEAN integration and to increase their competitiveness); (c) to increase trade, logistics and investment facilitation (to identify the means needed to improve transport logistics facilities and the priorities for investment); (d) to build ASEAN logistics capacity (by encouraging human resource development in the sector and by creating an environment conducive to developing the sector); (e) to promote ASEAN logistics service providers (by identifying and providing channels for their greater participation in the sector), and (f) to promote multimodal transport capacity (especially containerized transport). Each member country is encouraged to institute substantial liberalization of logistics services in the following sectors: maritime transport services (international freight transportation excluding cabotage), air freight services (liberalization of air freight services as stated in the ASEAN MOU on Air Freight Services in 2002), rail freight transport services (international rail freight transport services), and road freight transport services (international road freight transport services).

The roadmap for integration of logistics services sets six main targets. They are (i) to achieve substantial liberalization of logistics services involving the elimination of tariff and non-tariff barriers, (ii) to create the precondition for the free flow of goods, (iii) to enhance the competitiveness of ASEAN logistics services providers (LSPs) through trade (including documentation simplification) and logistics (transport) Facilitation, (iv) to expand the
capabilities of ASEAN LSPs, (v) to develop ASEAN human resources to meet the increasing demand for higher quality logistics services, and (vi) to enhance multi-modal transport infrastructure and investment. With regard to trade liberalization, in 2010, the ASEAN Free Trade Area managed to reach 99.1% of tariff lines at 0% for ASEAN-6 and 97% of tariff lines at 0-5% for Cambodia, Laos and Myanmar. As scheduled, by 2015, most intra-ASEAN tariff lines will have reached 0%. Liberalization of the logistics industry will be implemented in the ASEAN region in 2013. This liberalization includes maritime cargo handling services, storage and warehouse services, freight transport agency services and other auxiliary services, courier services, packaging services, and customs clearance services.

Continued expansion of transport and logistics infrastructure and services is essential in accelerating the establishment of the AEC by 2015. The aim of logistics integration is to create an efficient, secure, and integrated logistics environment to support the establishment and enhance the competitiveness of an ASEAN production base. Logistics integration is vital for realizing the full potential of the ASEAN Free Trade Area, as well as in enhancing the attractiveness of the region as a single production base, for growth in tourism, and as an investment destination, which will all serve to narrow development gaps. As a regional development initiative, ASEAN adopted Archipelagic Southeast Asia (ASEA) to build a friendly socioeconomic environment to encourage maritime logistics investment among ASEAN member countries. ASEA provides opportunities for member countries to obtain access to better quality goods and services, lower prices, employment opportunities, and a better standard of living. The ASEA region includes the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) and the Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT) (ASEAN Economic Community Blueprint, 2008; ADB, 2012). The key to understanding the region lies in an appreciation of its archipelagic nature. ASEA includes more than 24,000 islands, spreading across 5,200 km from east to west and 3,400 km from north to south. It has a population of over 350 million. Of that population, 225 million is in Indonesia and another 87 million is in the Philippines.

Launched in 1993 and 1994 respectively, the IMT-GT and BIMP-EAGA cooperation programs cover primarily archipelagic areas at the sub-national level. The IMT-GT
includes 32 provinces and states – 14 provinces in southern Thailand, 8 northern states of Peninsular Malaysia, and 10 provinces covering the entire island of Sumatra in Indonesia. BIMP-EAGA includes the sultanate of Brunei Darussalam; the provinces of Kalimantan, Sulawesi, Maluku, and West Papua in Indonesia; the states of Sabah and Sarawak and the federal territory of Labuan in Malaysia; and the provinces in the Mindanao region and Palawan in the Philippines. Both programs were established to help promote socioeconomic development in less developed and disadvantaged areas by increasing trade, tourism, and investment—backed by the underlying strategy of mobilizing the private sector as an engine of growth.

IMT-GT supports the development of five economic corridors through strategic sectors such as transport and energy, trade and investment, agriculture, halal products and services, tourism, and human resource development. BIMP-EAGA pursues a four-pronged strategy. This includes enhancing connectivity, establishing BIMP-EAGA as food basket for ASEAN (and the rest of Asia), promoting BIMP-EAGA as a premier regional tourism destination, and ensuring sustainable management of the environment.

3. RESEARCH METHODOLOGY

The methodology used for this research was based on a force-field analysis framework to assess the logistics system, consisting of infrastructure, service providers, institutional settings, and shippers. The research data were collected through semi-structured interviews to gather opinions about the supporting and inhibiting factors experienced by Indonesian stakeholders as part of the efforts to increase archipelagic logistics in ASEAN. Secondary data were also collected to provide supporting evidence for the respondents’ opinions.

Force-field analysis is a technique for identifying and analyzing the positive factors (driving forces) of a situation as well as assessing the negative factors (restraining forces) that are hindering an entity from attaining its objectives. This technique comes from Kurt Lewin’s notion of force-field analysis (Lewin, 1951), where a unit of potential change is always associated with the existence of a field of opposing or countervailing forces that needs to be addressed for the change to occur. Force-field analysis is widely used to inform decision making and coalition-building, particularly in planning and implementing change.
management programs in organizations (Thomas, 1985; Fawcett et al., 2010). It is a powerful method of gaining a comprehensive overview of the different forces acting on a potential institutional change issue, and for assessing their source and strength. In this research, the notion of opposing forces is important to understand broad and pervasive problems of archipelagic logistics in the context of ASEAN economic community, such as analyzing policies that must be instituted or changed, analyzing key players that may need to make some operational changes, and to identify strategic initiatives for making necessary changes.

This study was constructed on the basis of the following conceptual framework, consisting of four parts as shown in Figure 1: (i) the ideal conditions to be achieved by archipelagic Southeast Asia, (ii) current logistics conditions, (iii) the relationships between the supporting factors and the challenges faced, and (iv) the policy responses to the dynamics of the emerging opportunities and challenges. Archipelagic logistics in Southeast Asia is a logical precursor as well as consequence of the ASEAN Economic Community. AEC will facilitate more regional cooperation and will improve the scale of efficiencies, dynamism, and competitiveness of ASEAN member countries and economies. AEC will enable easier movement of goods, services, investment, capital and people. Ultimately, it will offer new ways of coordinating supply chains and offer access to new markets for established products. However, the fact remains that there exist conditions that are still far from ideal for ASEAN archipelagic logistics. The capacity to drive logistics sector development is influenced by various factors. The logistics capacity of a country can be measured by the existing infrastructure, the existing institutional environment, the capability of logistics service providers to operate efficiently within that context, and logistics services available to shippers and consignees.
Interviews were conducted to identify the current conditions, as well as the ideal conditions for respective stakeholders, along with their assessments of the supporting and inhibiting factors to increased archipelagic logistics capacity. The force-field analysis was carried out based on interviews with twelve total respondents: four with government agencies, three with third party logistics providers, two with importers and exporters, and three with logistics experts. The interviews were conducted by telephone with an average duration of 30 minutes. Some answers that required clarification were followed up upon via email. The first step of the interviews was to provide an overview of the areas to be discussed and the desired policy goals of archipelagic logistics in the ASEAN economic community. Common responses to this initial inquiry included the desire to see instituted an archipelagic ASEAN network that can offer cost effective, reliable, and safer logistics connectivity that will foster mutual free flows of goods and trades and encourage the members to be even further engaged in the archipelagic ASEAN network.

The respondents were also asked to offer their assessments of the forces supporting the changes and the forces working against the improvements. The driving and restraining forces were then sorted around common themes, before being prioritized according to their...
magnitude of influence, ranging from weakest to strongest. The data were analyzed based on the interview notes and coding comments. Notes were also arranged to provide reminders of points of particular importance from individual interviews. The coding comments were made so as to provide a record of the thoughts and ideas behind the conceptual classifications, grading, and comparisons that were made. Secondary data about the policies in question include data from publicity documents, annual reports, special brochures, news reports, investment analyses and other public sources.

4. FINDINGS

The views on the role of Indonesia as an archipelagic nation in the context of the desired changes on ASEAN logistics integration varied quite significantly in terms of the responses from the interviewees. One respondent said, “Although Indonesia is an archipelagic nation, at this time it is dominated by overland logistics, so the commitment to the ASEAN logistics connectivity will be realized before Indonesia resolves its domestic problems.” Another similar response was, “Look at the poor information and development of the supply chain system in our country today. Other countries have been ready to enter and compete in the regional free market, while we are still busy just preparing ourselves for it.”

The transport and storage industries contributed 3.5% to the economy in 2012; of this, transportation made up 85.5% of the total segment. Road transport represented the dominant sub-segment, which covered 53.09% of the total segment, followed by air transport at 21.65%. Sea transport only constituted 6.64% of the total transportation and storage segment.

Another respondent highlighted that trade policy was determined by various ministries sharing authority. For example, for export-import matters, businesses have to deal with several different ministries. Cross-ministerial coordination in handling cross-border trade among ASEAN countries has not yet fully been implemented due to the strong will of each ministry to retain power and/or authority. The respondents also expressed their doubts about the planned new ASEAN Single Window: one illustrative comment was “until now there has been no clear decision on who has the authority to regulate cross-border trade through the single window and on how to eliminate the overlapping authority in conducting export-import matters.”
Another response was: “In attempting to face the challenge of ASEAN logistics connectivity, the most important factor is to prepare Indonesian society to accept the ASEAN Economic Community.” According to this responder, Indonesia has not been systematically and consistently preparing its communities and micro, small and medium enterprises (SMEs). As a result, SMEs are not ready and will not be able to compete in the AEC. The respondent asserted that the question of whether Indonesia was ready to face the MEA in 2015 was no longer relevant, because the AEC 2015 has since been agreed upon. The more relevant question, he said, was whether Indonesia had completed the necessary preparations to face the 2015 AEC. Although Indonesia has been trying to reduce the gap between its SMEs and large companies, some sectors are still needing significant improvement to improve Indonesia’s overall competitiveness. In 2015, AEC’s will impose a new mobility of labor scheme, which will allow such professionals as doctors, engineers, accountants and others to move freely about the region. Unfortunately, unskilled workers, which represent a large percentage of Indonesia’s labor force and thus a potential advantage for the country, are not included in the liberalization program. Indeed, liberalization schemes for informal workers, one of the largest potential sources of non-oil revenue for Indonesia, tend to be under the AEC scheme to open in 2015.

Another respondent sees that logistics connectivity will allow the further establishment of the country as a production base, but the competitiveness of Indonesia will still be weaker than its neighboring countries. As a result, Indonesia will only be a destination market rather than a country that is part of a network of production bases (as touted by proponents of the AEC). Indonesia has also been fundamentally inconsistent in developing its local industries, which will eventually allow the dominance of foreign companies in these industries in Indonesia. Indonesia’s advantage, in terms of its natural resource base, will be consumed by partner countries that will process the raw materials into value-added products that will then be sold to the Indonesian market. Indonesia will lose the potential labor absorption and will have the burden of paying intellectual property rights to the ASEAN partner countries, which currently foster higher levels of innovation. With the interconnection of ASEAN, foreign players will likely take a further share of the logistics market in Indonesia. Already there have been many foreign players at some ports and airports in Indonesia. “With logistics interconnection, of course foreign players’ opportunities to go deeper into the national logistics market will be possible,” commented
one respondent about the potential outcome of increased logistics connectivity campaigns in ASEAN.

Another comment was that the high cost of Indonesian logistics services will only burden the end consumers (Paradise and Ariyani, 2011). The AEC’s goals are intended to protect and empower consumers, but it is unclear how the actors along the supply chain will have consumer interests in mind. As long as there are no incentives for efficiency improvements made by supply chain actors, it is difficult to see any reduction in logistics costs. The intended role of ASEAN members is clearly stated as seen from the extensive documentation outlining the elements of the liberalization and facilitation schemes for logistics services, but the actual capacity to make these changes happen is still weak. Respondents raised the case of the protracted dwelling time and congestion at Priok Port, which has imposed cost burdens on local logistics players. Indonesia has a low rank for its longest dwelling time with an average of 8.7 days, compared to Thailand with 5 days and Singapore with 1.2 days (Jakarta Post, 9/07/2013). The dwelling time at the port should be shortened to three days, as has been instructed by President Susilo Bambang Yudhoyono (Osman, 2013). His comment was, “How can logistics cost reductions among ASEAN countries happen if there have been no successful cases in terms of dwelling time and cost reductions to date, as well as the issues around fairness in logistic services?”

When asked about the driving forces empowering logistics connectivity improvements and opportunities for Indonesia, respondents’ submissions can be summarized as follows. First, ASEAN logistics connectivity improvement can increase trade volume to meet the strong and growing domestic demand, and create more opportunities to establish new markets (Oberman et al., 2012). As the saying goes, “ships follow the trade” – with the increase in global trade flows (exports and imports) and stimulation of the regional and domestic economies, the industrial freight forwarding services market size may also increase. Based on data from the Association of Indonesian Express Service (Asperindo), the business value of the parcel services industry has reached about Rp 3.4 trillion. This value does not include document delivery, cargo transportation services, warehousing services, warehousing management services, or the distribution of products to consumers. Currently, many businesses in manufacturing, retail, and consumer goods prefer to outsource distribution to specialist distribution firms. This is especially true for manufacturers and
retailers of consumer goods, as on-time delivery to ensure the smooth supply of goods is very important. Even those companies with distribution divisions are increasingly choosing to outsource distribution. Increased ASEAN logistics connectivity provides a great opportunity for logistics players to compete and enter new markets in the countries of Southeast Asia. Logistics companies can help obtain easy or new access to raw materials from new or existing sources. They are not simply movers of goods but also encourage production networks among ASEAN countries, ultimately serving global markets.

The trend of increasing trade flows is illustrated by the flow of goods and container ports. For example, the Port of Tanjung Priok, which has become one of the main gateways for goods shipping, has seen the number of containers handled grow by 26%; in 2010, the port processed 4.7 million TEUs, and last year it reached about 6 million. This large number of container flows is approaching the maximum capacity of the port, further development of additional capacity will be required at the Port of Tanjung Priok.

The next driving force is the creation of opportunities to invest in businesses and infrastructure that will add to the increased flow of goods and job opportunities for people in ASEAN. Given the objective to increase logistics connectivity, member countries are being encouraged to undertake infrastructure improvements in support of more competitive cross-border trade. In addition, investment in industry will further raise the demand for logistics services in construction, production, and services. One respondent said, “the logistics network connectivity will clarify production and distribution for firms, thus allowing greater collaboration and affordability.” Zero tariffs will be applied to products of the manufacturing industry, agriculture, mining, and other sectors. Ultimately, borderless trade flows between countries that sign the agreement, including Indonesia, will be implemented. This will impact cross border capital flows as well as the movement of goods.

Another driving force for Indonesia is its abundance of fertile land and natural resources. At present, this is an advantage because Indonesia can maintain control of these resources, including raw materials and other natural resources, both mineral and agro. With the disappearance of barriers between the ASEAN countries, Indonesia may increasingly lose the added value of the natural resources it owns. With the formation of a single market and
production base, the ASEAN region will become a hub for food, agriculture, and forestry sector development. Logistics connectivity will be an opportunity to increase the value-added raw materials produced by Indonesia.

Indonesia has developed a master plan to guide the country’s development and growth, particularly relating to Indonesia’s political and economic stability. In line with the country’s national development vision, as stated in Law No. 17 in 2007 as part of the National Long Term Development Plan 2005-2025, the vision for the acceleration and expansion of Indonesian economic development is “to creating an independent community Indonesia – forward, just, and prosperous.” The Master Plan for the Acceleration and Expansion of Indonesia's Economic Development lays out the nation’s ambitious plan to accelerate and expand its economic growth. The MP3EI’s action steps are designed help Indonesia become an advanced nation in 2025, with per capita income ranging between US$14,250-15,500, and with total GDP ranging between US$4-4.5 trillion. To realize this, real economic growth of between 6.4 and 7.5 percent in the period of 2011-2014, and the growth of between 8 and 9 percent from 2015-2025 will be required. There are several major programs over the next ten years in the sea transportation sector that are in line with the MP3EI, for which the government has set aside Rp 117 trillion (US$12.75 billion) for the development of seaports. The first program is the National Port Management Master Plan. This program is a concept plan for developing ports across the country in order to support the (recently established) six economic corridors. Ports play a vital role in transportation and trade, especially in a vast archipelagic country like Indonesia. Through this master plan, all ports will be expanded across the country and better management strategies will be implemented to speed up the loading and unloading processes and ultimately reduce logistics costs.

Next were the responses about those forces restraining increased logistics connectivity in Indonesia as part of the ASEAN initiatives. They will be summarized here. The first set of responses is focused on weak institutions, bureaucratic inefficiencies, and the lack of key government leadership. These weaknesses are marked by different ministries issuing different policies on the same issue, i.e. a lack of ministerial coordination, and a lack of efforts to address this issue from the government. One respondent said, “If you look at the programs of work or the studies conducted by various government departments, there are
some that are quite impressive. Those programs, among others, are MP3EI, the National Logistics System, Pendulum Nusantara, the Self-Sufficiency Roadmap for Cattle, the Agriculture Roadmap, the Roadmap for National Metal Industries, and various other good but unimplemented studies that have used a lot of state funds to create. One of the causes that many of the good programs or studies are not implemented is because in this country there is no institution that seriously handles the supply chain.” Discussions and brainstorming on various concerns about port management, the impact of the fuel price hike, the worsening infrastructure conditions that have caused longer operating time/trips and others seen to never stop. At present, businesses have not seen any significant changes, and they continue to operate as before to survive. For example, there has been no significant improvement on customs and other administrative procedures that delay and increase the cost of moving goods across international borders. Also, there has been no assignment of a coordinator for the national board of logistics integration or regulators to create an integrated, effective, and efficient national logistics system.

The next obstacle is a conflicting interests between regional and central governments. Since the regional autonomy era, the policies made by both the central government and local governments have continued to change. Rules often vary between governments. This creates an added level of complexity for businesses to compete, as they are unsure which policies or regulations that impose taxes or other levies may apply to them. Another example given by respondents is the plan to reduce the burden of the International Port of Tanjung Priok by building Bojonegoro International Port in Banten Province. This has not yet been realized, although both the plan was made and a presidential decree was issued by President Megawati. According to an official of Banten’s Development Planning Agency (BAPPEDA), speaking at an infrastructure conference in Banten, the stagnant development of Bojonegara International Port continues to be caused by a political bottleneck.

The third obstacle cited by respondents is the classic concerns of the logistics sector, such as the lack of sound infrastructure. At present, the existing infrastructure is far from adequate to handle the free flow of investment, goods, and services expected with AEC. This includes input, in-house and output logistics, as well as hard and soft infrastructure. Transporting goods in Indonesia remains very costly due to poor logistics and bad infrastructure. Trucking costs are the highest in ASEAN. The Institute for Economic and
Social Research of the University of Indonesia (LPEM-FEUI) found that trucking costs for typical goods using a typical truck in Indonesia (a number of provinces in Sulawesi, Java and Sumatra were sampled) reached as high as 34 cents per kilometer (Patunru, 2013). This is more than 50 percent higher than the average trucking cost in ASEAN, which is only 22 cents per kilometer. In addition, under the current situation Indonesia is failing to take advantage of its unique archipelagic geography, as it depends overly heavily on Tanjung Priok port as the primary international hub port (Trace et al., 2009). The Indonesian Chamber of Commerce and Industry (ICCI) said Tanjung Priok Port’s yard occupancy ratio (YOR) has shot up to over 100 percent. The lower the YOR, the less space a container takes up at a port, thus, the faster a container moves. The ICCI said businessmen may be losing up to Rp 4.8 billion (US$480,000) per day due to inefficiency at the port (Jakarta Post, 11/07/2013).

The fourth concern cited regards the uncompetitive condition of the domestic logistics market. One respondent said, "The condition of the supply chain system for products and commodity goods in Indonesia is quite alarming. Some indications are the high price – for example, the price of beef in Indonesia is more expensive than the price of beef in other countries due to the logistics issues; the price disparity between regions, for example the price difference between products in Java as compared with the prices of the same products in the eastern part of Indonesia; the fluctuations in the price, for example some commodities (meat, eggs, peppers, onions) goes up and down; and the scarcity of goods/commodities, e.g. the scarcity of LPG, beef, and chicken. There are times when price increases occur in certain seasons, which is not caused by the scarcity of a commodity, but rather by the suppliers who are taking advantage of additional demand. The above-mentioned supply chain problems, specifically for the staple commodities, such as agriculture, livestock, and agricultural commodities, are often for “perishable” and seasonal commodities. The problem is further complicated when there is a surge in demand, for example, on the days of religious festivities. Indeed the problems of supplying agricultural and livestock commodities in Indonesia is a good example of the overall problems with the supply chain. For agricultural commodities, there has been no integration among the production-distribution-consumption segments; the integration of these three segments is the main focus of supply chain management. These issues cause consumers to have to choose from goods at a higher price with lower quality. The
manufacturers do not have certainty of their supply (quantity, time, price, etc.) and of distribution. And logistics service providers assume an additional cost for storage (warehousing and inventory) and delivery.

The fifth barrier concerns the socio-political condition of Indonesia. Corruption remains a serious concern. Corruption can occur at the time of budget planning, project execution, and logistics activities. The lack of transparency, lack of standards, and the absence of checks and balances between the actors and the government agencies make rampant extortion and rent-seeking very common. A weak dispute resolution system between businesses and the government is another major reason for the leaks and wastage in the logistics sector. Indonesia Procurement Watch revealed that 70% of corruption comes from the procurement of goods and services, both at central and regional levels. One common mode of leakage is a mark-up (inflated project value) or lowering the specification of goods without referring to the value of the project. There are also fictitious tenderings. Based on data about the use of state revenues and the expenditure budget of 2012, expenditure for procurement projects amounted to Rp 273 trillion, and rose to Rp 370 trillion in 2013. If goods and services procurement is inflated by corruption as little as 10%, it will have a serious negative impact on state finances and the quality of infrastructure the government can deliver.

The sixth obstacle is the lack of logistical capacity of logistics actors in making improvements to the supply chain so that it may become more efficient, effective, and equitable. One respondent said, “The goods and logistics service providers are more short-term oriented, not collaborative, and weak at creating a more efficient performance collaboratively.” The participation of the private sector is merely reactive to initiatives driven by ASEAN logistics connectivity. There has been no effort from investment consortiums to improve the effectiveness of supply chain performance in terms of lead times, quality, cost, or processing cargo transportation documents. The private sector tends to have a “wait and see” attitude that makes the implementation of logistics connectivity improvements slow because the process is ad-hoc and not well planned. As businesses face high inbound and outbound logistics costs, it is rational that they shift the burden onto consumers or weak members along the supply chain. Consequently, the price for a given product is higher than that of a similar product produced by other countries. The price
increase has a limit, because international competition will make Indonesia price takers rather than price setters. Uncompetitive businesses will go bankrupt or will be forced to cut their logistics costs at the expense of their logistics’ haulage capacity, quality, and/or safety. Indonesia’s low competitiveness in this area has made the country’s position in the regional production network lag behind.

Another weakness is the logistics capacity of local players that have a poor footprint in ASEAN in terms of resources or infrastructure. Compared to Singapore and Malaysia, the network of Indonesia's logistics players is still very weak. Singapore, Malaysia, and Thailand all have a strong logistics network in ASEAN. Businesses from those countries are already active in neighboring countries, while Indonesian companies are still struggling players in their own domestic market. A stronger network, of course, will facilitate the development of foreign logistics players in Indonesia. Multinational companies prefer to work with other multinational companies because they have a wider network. One respondent stated, “With multinational companies, connections are more easily made, rather than with the Indonesian companies.”

Logistics capacity constraints are also exacerbated by the lack of human resources capacity. The current labor force is not fully adapted to supply chain management, and there remains a barrier in language as well. Indonesia is far behind on rankings on international human resources capacities. Based on data from the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2011, the quality of Indonesian human resources is still ranked 121, out of 187 countries, while Singapore is ranked 18, Brunei is ranked 30, and the Philippines is ranked 114.

Another inhibiting factor that Indonesia has, according to a respondent, is that Indonesia's banking system charges entrepreneurs a high level of interest on loans for new business ventures. Besides the high cost of capital faced by these businesses and those in logistics services, the currency risk and cost is another barrier. In China, interest rates are around 2%, in Malaysia around 3%. Indonesian banks charge an interest rate of around 12%. With this interest rate, it is and will be very difficult for SMEs to compete in the AEC. Similarly, with such high interest rates, logistics service providers will have difficulty attaining their target return on investment, necessary to spur new investment.
The next obstacle is the lack of understanding of ASEAN connectivity goal to narrow the development gap. All countries are concerned with their safety, employment, and access to their domestic resources. However, logistics integration aims at creating a system for the efficient movement of goods, people and capital, in order to promote economic solidarity and achieve the goals of eradicating poverty, creating a social justice, and creating a lasting peace. This might pose a threat to those parties concerned with maintaining a tight hold on the status quo, or their exclusive access to resources. Managing a supply chain in an archipelagic nation is not yet looked upon as something that offers social and benefits for the nations and societies involved.

Another inhibitor for Indonesia in enhancing connectivity with other ASEAN countries is funding. The classic problem is the fact that Indonesia lacks institutions with strong capital structures to finance planned projects. The government remains focused subsidies rather than infrastructure spending. Government spending on infrastructure, as a percent of GDP, was less than 2.5% from 2000 to 2013. In 2005, spending on infrastructure was only 0.85% of GDP, whereas in 2012, infrastructure spending had increased to approximately 2.12%. In 2013, it is scheduled to amount to approximately 2.1%. The experience of other countries has shown that spending on infrastructure should be over 5% to support healthy economic growth. ASEAN countries are still dependent on their governments’ funds, but they additionally have the option of funds from development banks like ADB or other banks to improve their infrastructure. The low private investment in the maritime transport sector is mainly due to uncertainty in the determination of the initial tariff rate, which may be caused by the inflation adjustment and the taxes on ship and spare parts purchasing. The current tariff rates in most sub-sectors of transport do not reflect their real costs. In addition, a cross-subsidy policy cannot resolve the issue; in fact, such policies add further problems. This is because the implementation of the policy is not transparent or easily accountable. This leads toward situations of moral hazard. Finally, banks in Indonesia do not often choose to finance long-term infrastructure. Indonesia does not have institutions that specifically deal with infrastructure financing, and the government does not provide a guarantee on all infrastructure projects. The capacity of private institutions such as PT Indonesia Infrastructure Finance (IIF) and PT Sarana Multi Infrastructure (SMI) for funding infrastructure projects is still limited.
The last question put to the respondents was regarding an action plan to be developed to increase the positive driving forces or mitigate the negative ones. One idea was to make logistics connectivity a means for delivering any kind of development. The idea should not be limited to how to move goods from one place to another. One respondent said, “Logistics connectivity should be looked upon as a means to reduce the economic gap between ASEAN countries and not as a way of heightening the exploitation of natural resources and increasing the dependence of one nation on another.” The participation of both the private sector and community in logistics connectivity needs to be encouraged, and so far, it has only been the public sector. The road map for ASEAN integration of logistics services (2013-2015) put forth that the foreign equity participation threshold (FEP) for the nine sub-sectors of the ASEAN logistics services should reach 70%, and there should be no restrictions on market access. This means that a provider of logistics services from one ASEAN country can freely establish a joint venture in another ASEAN country with 70% ownership. Governments need to ensure the existence of a national forwarder and logistics business, and modernize the businesses, many of which are still operated in outdated ways. These firms should be led to transform into modern operations, using information and technology to run their businesses. Improvement of inter-island transportation will be required, to avoid a pricing disparity between goods traded between islands within a country and imported goods from abroad.

The next idea was to increase logistics capacity by solving the bottlenecks that have withheld progress so far. Cooperation among businesses and between countries should be managed by establishing a task force that systematically highlights the bottlenecks in the flow of goods and enforces improvements on logistics performance. One proposed series of corrective actions offered by a respondent was to identify common priorities and “quick wins,” establish a common baseline in ASEAN, and initiate a twice-yearly dialogue with the private sector on supply chain issues, to feature task forces, concrete deliverables, and a score card. Cooperation can focus on the reduction of logistics costs, simplification of documents, and improvement on service levels. Other themes concern LSPs: adopting best practices in providing logistics services, promoting regional cooperation of LSPs, and developing and updating databases on LSPs. Also noted was the need to develop human resources: upgrading skills through joint trainings and workshops and encouraging regional centers of excellence.
To take full advantage of its production network, Indonesia has to increase the attractiveness of its investment climate. The government needs to ensure that the private sector can invest easily and expand businesses. Various forms of incentives can be setup by the government to encourage the private sector to develop archipelagic logistics. Furthermore, in order to ensure competitive SMEs in AEC by 2015, the government and the private sector need to work together to ensure a sufficient stock of raw materials, appropriate marketing services, cheap capital, and increased exports. Further, to increase competitiveness in anticipation of AEC in 2015, an increase of reliable human resources is absolutely necessary. Human resources has to prepare individuals to be able to compete both in regional and global labor markets.

The next planned action is developing a regular communication between countries to intensively study and promote funding solutions and public-private partnerships for the logistics industry. In an era of openness, there are many challenges and opportunities. The main challenge for Indonesia is underdeveloped infrastructure. Some of the potential opportunities are the possibility for Indonesia to be a logistics hub of Southeast Asia and East Asia, as well as to the opportunity of extending cooperation with other ASEAN logistics companies. However, if Indonesia fails to develop its infrastructure, the ports and airports in Indonesia will most likely become merely feeders of the major ports and airports of other countries in Asia instead of becoming a hub. Another challenge for Indonesia is the increasing number of foreign logistics service companies present in Indonesian market, which will take an increasing portion of the growing trade flows.

The last proposal is about proactive adjustments of national laws and agreements, which will require cooperation between the public and private sectors of ASEAN countries. One example could be the promotion of logistics facilitation, which includes enhancing transparency of regulations for the logistics sector, the implementation of the ASEAN Framework Agreement on transport, the implementation of the framework agreement on multimodal transport agreement, strengthening intra-regional maritime transports, and enhancing private participation in transport infrastructure for logistics and services.
5. DISCUSSION

ASEAN logistics connectivity creates both opportunities and challenges for Indonesia. The most prominent concern is the uncertain position that Indonesia is currently in due to its lack of coordination and planning efforts in advance of the AEC. With the implementation of AEC getting closer, it is time for Indonesia to clean up and take action as soon as possible to face the increasingly tough competition. Priorities of national interest must be put forward by various parties and cooperation sustained to help Indonesia maximize the benefits to be attained from AEC. In addition to industrial and infrastructure problems, there are still many problems such as business licensing issues and other issues that have to be overcome before Indonesia is ready to face the AEC. However the scale of the opportunity of the AEC cannot be ignored - Indonesia is currently ranked 16th in the world for economies of scale. Indonesia’s capacity for economies of scale is also supported by the size of its productive-age population and the growth of its middle class (van Diermen et al., 2011). Further, the improvements made to date are reflected in Indonesia's investment rating boost from the international rating agencies and the inclusion of Indonesia as the world’s number four prospective destination for investment according to UNCTAD's World Investment Report. Indonesia's economy has strong fundamentals. When many countries were struck by the global financial crisis, Indonesia managed to maintain positive economic growth.

To realize logistics connectivity opportunities, Indonesia, as an archipelagic nation, has to clean up its act and effectively take action to support the appropriate parties and legislations. This study highlights the importance of increasing logistics capacity that will not only able to help solve the problem of bottlenecks in the economy but also encourage social justice for ASEAN countries to reduce the development gap. One thing that Indonesia can do in terms of logistics connectivity is to participate in creating food safety and food security for all member countries of ASEAN. ASEAN countries, through logistics connectivity, can improve the food supply chain for ASEAN-traded food, enhance traceability and recall efforts of unsafe foods, reduce costs, drive the supply chain efficiently, and increase consumer confidence in food products.
The results of this study will complement the findings of APEC’s supply chain connectivity framework (Syslo et al., 2011). The APEC Business Advisory Council (ABAC) encouraged its members to enhance of supply chain connectivity to increase competitiveness in the region through easier, cheaper and faster trade in goods and services across borders. Through the APEC Supply Chain Connectivity Framework, all member economies strive to achieve a 10% improvement in supply chain performance by 2015. The framework identifies eight chokepoints that businesses rank as highly significant to promote the smooth flow of goods and services throughout APEC. It also provides action points to address such barriers. ASEAN members can continue to encourage discussion in operating the ASEAN Growth Strategy, with the aim of sustaining equitable growth through the supply chain approach.

6. CONCLUSIONS

The advent of the ASEAN Economic Community (AEC) in 2015 brings to the fore the importance of logistics connectivity. Establishing a more efficient transport and logistics network that integrates road, rail and sea transport will be critical in order to maximize the benefit of AEC. To speed up logistics integration, ASEAN needs to take four steps: liberalize trade, eradicate tariff and non-tariff barriers to facilitate the flow of goods, create opportunities for logistics companies, and improve logistics management capability and human resources development. Logistics connectivity involving different modes of transportation and an integrated production base will be key to reshaping archipelagic Southeast Asian logistics. The goal is to create efficient linkages. Logistics connectivity looks at how multi-modal connections can contribute to competitiveness. For archipelagic countries such as Indonesia, Malaysia, and Philippines, efficient, reliable and affordable shipping services will provide opportunities to narrow economic development gaps.

Implementing logistics connectivity will require significant changes in the infrastructural and institutional settings among ASEAN countries. Despite being an archipelagic nation consisting of hundreds of islands, the role of sea transportation in Indonesia is still relatively minor and is limited to areas of high economic development such as Java and Sumatra islands. By using a force-field analysis in this research, the barriers that are hindering Indonesian integration with and capitalization of increased ASEAN logistics
connectivity have been identified. The biggest obstacle is leadership and governance, and ideas were presented on how governments should go about improving both soft and hard infrastructure. A key finding was that an archipelagic logistics chain needs to link logistics capabilities between islands, economies, and nations to ensure the economic and social development that will contribute to sustainable economic growth. Implementing this recommendation will narrow development gaps, but doing so will require policy coordination between a large number of stakeholders.

This research implies that ASEAN members need to pay serious attention to a holistic approach to improving logistics connectivity. Leadership, governance, and empowerment are necessary to bring about the end-to-end coordination of logistics facilitation. The member nations should address the forces constraining this coordination with concrete pilot projects that bring mutual benefits in terms of speed, reliability, and reduced costs to all stakeholders.

7. REFERENCES


*The Jakarta Post* (11 July 2013) Cikarang Dry Port ghost town despite crowded Tanjung Priok Port.

*The Jakarta Post* (9 July 2013) Blame game begins in Tanjung Priok port gridlock.


Cross–border Trade and ASEAN Logistics Connectivity

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Abstract: This study examines the cross–border trade between Thailand and neighboring countries, including Myanmar, Laos, Cambodia and Malaysia. It is found that the nature of trade at the borders is related to the type of border crossing and classified as official or unofficial. Official trade typically occurs at the permanent crossing points and unofficial trade typically occurs at the checkpoints for border trade. The factors that determine the commodities exchanged and the trade patterns are the manufacturing capabilities and the transport networks of the four countries. If these factors for both Thailand and the neighboring countries are roughly equivalent in terms of quantity and standards, the commodities traded across the borders are mainly raw materials and components for manufacturing and the trade pattern is only official. If the neighboring countries’ capacities in these areas are lower than that of Thailand, consumer goods is the major export from Thailand, and the trade patterns are both official and unofficial.

1. INTRODUCTION

The geography of the ASEAN region is divided into two parts: the mainland, and the archipelago. The member countries which are situated on the mainland are Myanmar, Thailand, Laos, Cambodia, and Vietnam. The other member countries, including Singapore, Brunei, Indonesia and the Philippines, are archipelagic countries. Malaysia belongs to both parts of the region, because part of the country is situated on the mainland (the Malay Peninsula), and the other part is located on Borneo Island.

Thailand borders four mainland countries: Myanmar along the entire western border of Thailand, with a borderline of 2,401 kilometers; Laos to the north and the northeast of the
country with a borderline of 1,810 kilometers; Cambodia to the northeast and east of the
country with a borderline of 798 kilometers, and Malaysia to the south with a borderline of

![Figure 1. Map of Thailand and Neighboring Countries](image)

According to the Thai Customs Act (No. 7) B.E. 2480, section 3, the land frontier refers to
the land frontier separating the Kingdom of Thailand from any foreign territory and
including any inland waterway constituting a frontier or part of a frontier of the Kingdom.
Hence the cross–border trade in this paper refers to the trade between Thailand and the four
neighboring countries transported by land and by inland waterway, but not including transit
cargoes.

2. BORDER CROSSINGS

Along the five thousand demarcation lines which mark the Thai borders are situated 88
crossing points, at which people and vehicles are allowed by government authorities to
enter and depart the country. These crossing points are divided into two categories: permanent crossing points and checkpoints for Border Trade (see Table 1).
Table 1. Number of Border Crossing Points in Thailand by Border Area and Type of Border Crossing Point

<table>
<thead>
<tr>
<th>Border Area</th>
<th>Type of Border Crossing Point</th>
<th>Permanent Crossing Point</th>
<th>Check Point for Border Trade</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand–Myanmar</td>
<td></td>
<td>4</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>Thailand–Laos PDR</td>
<td></td>
<td>17</td>
<td>29</td>
<td>44</td>
</tr>
<tr>
<td>Thailand–Cambodia</td>
<td></td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Thailand–Malaysia</td>
<td></td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>36</strong></td>
<td><strong>52</strong></td>
<td><strong>88</strong></td>
</tr>
</tbody>
</table>

Source: Compiled from Foreign Affairs Division, Office of The Permanent Secretary for Interior, Thailand: online.

2.1 Permanent Crossing Points

The permanent crossing points were established by the Ministry of the Interior, based on agreements between the Thai government and the bordering country’s government. These are considered immigration checkpoints, and thus, the crossing of people and vehicles is under the control of immigration authorities. There are 36 permanent crossing points, consisting of the following:

- Thailand–Myanmar Border: There are four permanent crossing points, two in the north, one in the west and one in the south. The important crossing points are Mae Sai Crossing Point, Chiang Rai Province and Mae Sot Crossing Point, Tak Province.
- Thailand–Laos Border: There are seventeen permanent crossing points. Four are located in the north, and thirteen in the northeast. The important crossing points are the Thai–Lao Friendship Bridge Crossing Point in Nong Khai Province, Nakhon Phanom Crossing Point, the Second Friendship Bridge in Mukdahan Province, and Chong Mek Crossing Point in Ubon Ratchathani Province.
- Thailand–Cambodia Border: Of the six permanent crossing points, two are located in the northeast and four in the east. The important permanent crossing point are Ban Klong Luek Crossing Point, Sa Kaeo Province and Ban Hat Lek Crossing...
Point, in Trat Province.

- Thailand–Malaysia Border: There are nine permanent crossing points, all situated in the southern part of Thailand. The important crossing points are Sadao and Padang Basar in Songkhla Province.

2.2 Checkpoints for Border Trade

The Checkpoints for Border Trade were established by a provincial proclamation with approval of the Ministry of Interior. The purpose of opening these checkpoints is to allow people in border areas to trade small amounts of essential daily consumer products, and the checkpoints also serve basic humanitarian purposes such as allowing people to visit relatives or see a doctor or hospital in Thailand. The crossings of people, vehicles, and goods are under the control of the district in which the checkpoint is situated. There are total 52 checkpoints for border trade: 29 on the Thai–Lao border, 13 on the Thai–Burmese border, and 11 on the Thai–Cambodian border. This type of crossing point is not found on the Thai–Malaysian border.

3. TYPES OF CROSS–BORDER TRADE

Apart from the passage of people and vehicles, a border crossing point is a channel of import and export of goods for a country. The cross–border trade between Thailand and its neighboring countries is performed in two manners: official and unofficial. These designations apply to all of the above-mentioned crossing points.

3.1 Official Cross–Border Trade

Official cross–border trade is conducted under the Thai Customs Act B.E. 2480. In the act it is stipulated that imported and exported goods, transported by land into or out of Thailand, have to be transported by an approved route and examined at the customs boundary post by the customs house there. Because the permanent border crossing points are the customs boundary posts, imported and exported goods are transported through these
permanent crossing points. However, some checkpoints for border trade are also classified as customs boundary posts, such as the Three Pagodas Checkpoint in Kanchanaburi.

Official cross-border trade between Thailand and Malaysia is the highest trade flow by import and export total value. This is followed by the official trade with Myanmar, Laos and Cambodia respectively. The import and export trade volume between Thailand and the neighboring countries varies according to the economic conditions of each neighboring country as follows.

- **Trade between Thailand and Malaysia:** Despite a higher total trade value than that for the other countries, both imports and exports traded between these two countries are mostly not for domestic consumption. This is because the major export is rubber. The rubber is transported to be loaded at Penang Port and shipped to other destination countries. The major import from Malaysia is primarily computer components, used in computer manufacturing.

![Figure 2. Thailand and Malaysia Cross-border Trade, 2007–2012](image)

Source: Department of Foreign Trade, Ministry of Commerce of Thailand, 2013: online.

- **Trade between Thailand and Myanmar:** The nature of the trade between these countries is quite different than for the other pairings. The value of imports from Myanmar is higher than that of the exports leaving Thailand. The major import is natural gas, transported by pipelines to the border of Kanchanaburi Province. The major exports are diesel oil and gasoline, and consumer products.
Trade between Thailand and Laos: The export value going to Laos is much higher than the import value. The major exports are diesel oil and gasoline, as well as consumer goods, while the major imports are copper and lumber.

Trade between Thailand and Cambodia: Similar to the trade between Thailand and Laos, the values of the exports from Thailand to Cambodia is much higher than the value of the imported goods. The major imports are steel, cereal and vegetable oil. The major exports are motorcycles, car engines, and sugar.
3.2 Unofficial Cross-border Trade.

This type of trade is found on the border Thailand and Myanmar, Laos, and Cambodia. In the past it occurred on the Thailand and Malaysia border, but now it has largely disappeared. As implied by the name of the checkpoint for border trade, unofficial cross-border trade usually takes place at this type of crossing points. However, unofficial trade also occurs at some permanent crossing points as well, such as the Mae Sai Permanent Crossing Point.

The trading patterns along the border of Thailand and its three neighboring countries are similar. That is, for the most part, people are crossing the borders from neighboring countries in order to buy consumer products in Thailand. Goods are purchased from the markets or market fairs in the border areas and carried back either for household consumption or for trading in villages. Although the volume and value of the unofficial trade is much higher than for official trade, the size of each shipment is small, and thus can be deceiving when compared to the volume of official imports and exports. This is part of the reason this type of trading is exempt from customs formalities. The net result is that this type of trade is not included in the official trade statistics; therefore, the value of unofficial cross-border trade is not really known. However it is estimated that the value is probably high, as everyday a great number of people from the neighboring countries cross the border to purchase goods from Thailand. Some customs officers estimate that unofficial cross-border trade accounts for 50–70% of the overall trade of each border province.
Table 2 shows the value of the official cross–border trade between Thailand and the four neighboring countries by province.

### Table 2. The Value of Official Cross–border Trade between Thailand and the Four Neighboring Countries by Province, 2007–2012

<table>
<thead>
<tr>
<th>No.</th>
<th>Province</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chiang Rai</td>
<td>5,952</td>
<td>8,327</td>
<td>8,886</td>
<td>14,266</td>
<td>19,545</td>
<td>21,741</td>
</tr>
<tr>
<td>2</td>
<td>Chiang Mai</td>
<td>31</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>3</td>
<td>Mae Hong Son</td>
<td>610</td>
<td>840</td>
<td>219</td>
<td>385</td>
<td>299</td>
<td>192</td>
</tr>
<tr>
<td>4</td>
<td>Nan</td>
<td>433</td>
<td>774</td>
<td>493</td>
<td>827</td>
<td>2,861</td>
<td>4,610</td>
</tr>
<tr>
<td>5</td>
<td>Loei</td>
<td>2,018</td>
<td>2,902</td>
<td>2,941</td>
<td>2,792</td>
<td>3,784</td>
<td>6,039</td>
</tr>
<tr>
<td>6</td>
<td>Nong Khai</td>
<td>21,460</td>
<td>29,693</td>
<td>31,849</td>
<td>36,552</td>
<td>44,583</td>
<td>63,349</td>
</tr>
<tr>
<td>7</td>
<td>Buen Kan</td>
<td>3,658</td>
<td>4,018</td>
<td>4,204</td>
<td>3,401</td>
<td>3,424</td>
<td>3,265</td>
</tr>
<tr>
<td>8</td>
<td>Nakhon Phanom</td>
<td>3,253</td>
<td>5,190</td>
<td>3,279</td>
<td>3,261</td>
<td>3,447</td>
<td>3,621</td>
</tr>
<tr>
<td>9</td>
<td>Mukdahan</td>
<td>9,828</td>
<td>21,361</td>
<td>14,867</td>
<td>19,670</td>
<td>25,502</td>
<td>28,677</td>
</tr>
<tr>
<td>10</td>
<td>Ubon Rachathani</td>
<td>4,561</td>
<td>6,336</td>
<td>6,423</td>
<td>8,986</td>
<td>11,097</td>
<td>13,334</td>
</tr>
<tr>
<td>11</td>
<td>Surin</td>
<td>809</td>
<td>2,189</td>
<td>1,673</td>
<td>1,612</td>
<td>1,669</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Sa Kaeo</td>
<td>19,076</td>
<td>28,352</td>
<td>22,980</td>
<td>30,904</td>
<td>37,480</td>
<td>50,435</td>
</tr>
<tr>
<td>13</td>
<td>Chanthaburi</td>
<td>1,685</td>
<td>2,940</td>
<td>2,527</td>
<td>3,630</td>
<td>3,401</td>
<td>4,521</td>
</tr>
<tr>
<td>14</td>
<td>Trat</td>
<td>11,899</td>
<td>16,481</td>
<td>18,023</td>
<td>19,019</td>
<td>21,912</td>
<td>24,937</td>
</tr>
<tr>
<td>15</td>
<td>Tak</td>
<td>11,607</td>
<td>19,617</td>
<td>26,569</td>
<td>25,057</td>
<td>22,105</td>
<td>39,377</td>
</tr>
<tr>
<td>16</td>
<td>Kanchanaburi</td>
<td>72,262</td>
<td>104,201</td>
<td>88,266</td>
<td>85,390</td>
<td>104,366</td>
<td>108,711</td>
</tr>
<tr>
<td>17</td>
<td>Prachuap Khiri Khan</td>
<td>180</td>
<td>183</td>
<td>4</td>
<td>3</td>
<td>42</td>
<td>75</td>
</tr>
<tr>
<td>18</td>
<td>Ranong</td>
<td>7,092</td>
<td>12,797</td>
<td>13,301</td>
<td>16,761</td>
<td>25,334</td>
<td>19,996</td>
</tr>
<tr>
<td>19</td>
<td>Satun</td>
<td>310</td>
<td>326</td>
<td>399</td>
<td>294</td>
<td>390</td>
<td>241</td>
</tr>
<tr>
<td>20</td>
<td>Songkhla</td>
<td>332,574</td>
<td>421,716</td>
<td>378,698</td>
<td>488,444</td>
<td>549,032</td>
<td>504,787</td>
</tr>
<tr>
<td>21</td>
<td>Yala</td>
<td>3,115</td>
<td>3,477</td>
<td>2,848</td>
<td>4,158</td>
<td>5,980</td>
<td>5,442</td>
</tr>
<tr>
<td>22</td>
<td>Narathiwat</td>
<td>3,526</td>
<td>3,754</td>
<td>3,451</td>
<td>3,461</td>
<td>3,555</td>
<td>3,620</td>
</tr>
<tr>
<td>23</td>
<td>Other Provinces</td>
<td>31,984</td>
<td>12,710</td>
<td>1,902</td>
<td>1,242</td>
<td>1,700</td>
<td>1,834</td>
</tr>
</tbody>
</table>

**Total** | 547,925 | 708,188 | 633,804 | 770,115 | 890,669 | 910,500

Source: Department of Foreign Trade, Ministry of Commerce of Thailand, 2013: Online.
4. CROSS–BORDER TRANSPORTATION

Of the over five thousand boundary lines between Thailand and the four neighboring countries, 3,465 kilometers of the borders are demarcated by mountain ranges, 58 kilometers by linear boundary lines, and the rest of 2,133 kilometers are by rivers (see Table 3). Hence, land transport, especially road and inland water/river transport play an important role in cross–border transportation, both in official and unofficial cross–border trade.

Table 3. Demarcation of Boundaries between Thailand and Neighboring Countries

<table>
<thead>
<tr>
<th>Border Area</th>
<th>Demarcation of Boundary</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mountain Range</td>
<td>Liner Boundary Line</td>
</tr>
<tr>
<td>Thailand–Myanmar</td>
<td>1,687</td>
<td>-</td>
</tr>
<tr>
<td>Thailand–Laos</td>
<td>702</td>
<td>-</td>
</tr>
<tr>
<td>Thailand–Cambodia</td>
<td>524</td>
<td>58</td>
</tr>
<tr>
<td>Thailand–Malaysia</td>
<td>552</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,465</strong></td>
<td><strong>58</strong></td>
</tr>
</tbody>
</table>


4.1 Cargo Transportation in Official Cross–border Trade

With growing official trade, the transport of goods by road is increasingly important. The construction of bridges, particularly along the Mekong River and her tributaries which are the major demarcation lines between Thailand and Laos, enables trucks to directly carry goods across the rivers – important when such a large quantity of borders are demarcated by river(s). At present there are four bridges constructed so far: the 1st Friendship Bridge (1994) in Nong Khai, the Hueang River Bridge (2004) in Loei, the 2nd Friendship Bridge (2006) in Mukdahan, and the 3rd Friendship Bridge (2012) in Nakhon Phanom. There is also one bridge under construction, crossing the Mekong River in Chiang Rai Province.
The pattern of road transport at all borders is similar. Goods are double-handled from Thai trucks to the neighboring countries’ trucks and vice versa, either at the border of Thailand or of the neighboring countries. This is because the trucks of each country are only able to enter into the other country not further than 2 kilometers from the border. At the Malaysian border, imported and exported cargo is mostly transported by containers. In contrast, containers are not permitted to be transported into Myanmar by land border; they have to be shipped to the major ports of the country.

Rail transport of goods can be found only at the Thailand–Malaysia border in Padang Basar Permanent Crossing Point, Songkhla Province. Containers are transported by trailers to the Padang Basar Station in Malaysia. After being loaded onto train wagons, they are transported to Penang Port and shipped to other destination countries by sea.

Looking at water transportation, cargo can be directly shipped by boats, or trucks crossing rivers by ferries. The size of the boats is typically 100 to 200 tons. However, the water transportation capacity at each border is quite different. In Ranong Province, which borders Myanmar and is demarcated by the Kraburi River, most of the boats are Burmese, while Thai boats number much fewer. This is due to the fact that the river is much more easily accessible from the territory of Myanmar. At the Lao border, the boats and ferries belong to Laos companies. This is an agreement between the two countries. At the Cambodian border in Trad Province, most of the consumer goods are purchased from Bangkok and transported by truck to Ban Had Lek, then loaded onto Thai boats and shipped to Cambodia.
4.2 Cargo Transportation in Unofficial Cross–border Trade

Road transportation of cargo in unofficial cross–border trade between Thailand and the three neighboring countries (Myanmar, Laos and Cambodia) is not much different. Goods are mainly transported by small trucks or pickups. Modified vehicles, such as farm trailers pulled by small tractors, are generally found at the border of Laos, and those pulled by motorcycles are often found at the Cambodian border. Trolleys pushed by laborers are common at all borders. Unofficial cross-border trade is technically supposed to follow the same border regulation as official trade: these vehicles are permitted to enter into the border of Thailand not further than 2 kilometers and vice versa.
The boats used for water transport are about 5 to 10 tons, and transport both passengers and cargo. In contrast to the official trade, on the Thai–Lao border the boats belong to both nations and on the Thai–Burmese border the boats are mostly Thai boats. In the dry season, when some parts of the Mekong River and her tributaries (namely the Hueang River) become shallow, the Lao border traders simply carry cargo across the rivers by themselves.
5. FACTORS AFFECTING CROSS–BORDER TRADE

There are two important factors that affect the type of cargo and trade patterns of cross–border trade. One is the manufacturing capabilities of Thailand and the neighboring countries, and the other is the transportation network that links Thailand and the other countries.

5.1 Manufacturing Capability

Manufacturing capability is the major factor that affects the type of commodities exchanged in cross–border trade. Table 3 shows that the GDP (gross domestic products) of Myanmar, Laos and Cambodia are lower than of Thailand and Malaysia. When taking the
GDP exclusively from manufacturing into consideration, that figure is much lower for those countries than for Thailand or Malaysia. This is why consumer products are not the major commodity traded between Thailand and Malaysia: both of them are able to manufacture these products by themselves. If the manufacturing level of a country is low, consumer goods which are the major products constituting the manufacturing industry will not be adequate for national domestic consumption, and importation of these products will be necessary to meet the demand of the country. This is why consumer goods are the major exports from Thailand to the three neighboring countries.

Table 4. GDP from Manufacturing, Thailand and the Neighboring Countries, 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP (Million US$)</th>
<th>Manufacturing (Million US$)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>358,441</td>
<td>113,002</td>
<td>31.53%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>258,129</td>
<td>67,492</td>
<td>24.56%</td>
</tr>
<tr>
<td>Cambodia</td>
<td>11,614</td>
<td>1,956</td>
<td>14.69%</td>
</tr>
<tr>
<td>Laos PDR</td>
<td>7,014</td>
<td>649</td>
<td>9.26%</td>
</tr>
<tr>
<td>Myanmar</td>
<td>29,860</td>
<td>8,075</td>
<td>27.04%</td>
</tr>
</tbody>
</table>

Source: Compiled from Asian Development Bank., 2013: online.

5.2 Transportation Network

The part of the transportation network plays the most crucial role in cross-border trade is the road network. Though the cost of transport by road is higher than other forms such as rail, it is the most efficient mode of transport to access trade partners along the frontier.

In the Master Plan on ASEAN Connectivity, the development of road infrastructure is emphasized on the Asian Highway Network, which is an expansion of the Trans-Asian Highway Network within ASEAN. The planned development comprises the filling of the present missing links, most of which are in Myanmar; it also calls for the improvement of the standards of the Asian Highways to at least at Class III (2 lanes, double bituminous treatment) (ASEAN, 2011: 12). The Asian Highways connecting Thailand and the four neighboring countries are AH1, AH2, AH3, AH12, AH13, AH15, AH16 and AH18 (ESCAP, 2010: 12–14).
### Table 5. Border Crossing Points and Border Towns on the Asian Highway Network

<table>
<thead>
<tr>
<th>No.</th>
<th>Thailand Crossing Point</th>
<th>Neighboring Country Border Town</th>
<th>Neighboring Country Border Town</th>
<th>Country</th>
<th>Asian Highway</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ban Klong Luek</td>
<td>Aranyaprathet</td>
<td>Poipet</td>
<td>Cambodia</td>
<td>AH1</td>
</tr>
<tr>
<td>2</td>
<td>Ban Rim Moei</td>
<td>Mae Sot</td>
<td>Myawadi</td>
<td>Myanmar</td>
<td>AH1</td>
</tr>
<tr>
<td>3</td>
<td>Sa Dao</td>
<td>Sa Dao</td>
<td>Bukit Kayu Hitam</td>
<td>Malaysia</td>
<td>AH2</td>
</tr>
<tr>
<td>4</td>
<td>Mae Sai River Bridge</td>
<td>Mae Sai</td>
<td>Tachilek</td>
<td>Myanmar</td>
<td>AH2</td>
</tr>
<tr>
<td>5</td>
<td>Chiang Khong</td>
<td>Chiang Khong</td>
<td>Houayxay</td>
<td>Laos</td>
<td>AH3</td>
</tr>
<tr>
<td>6</td>
<td>Thai–Lao Friendship Bridge</td>
<td>Muang Nong Khai</td>
<td>Thanaleng</td>
<td>Laos</td>
<td>AH 12</td>
</tr>
<tr>
<td>7</td>
<td>Ban Huai Kon</td>
<td>Huai Kon</td>
<td>Muang Ngeun</td>
<td>Laos</td>
<td>AH 13</td>
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<td>8</td>
<td>Nakon Phanom</td>
<td>Muang Nakon Phanom</td>
<td>Thakhek</td>
<td>Laos</td>
<td>AH 15</td>
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<td>9</td>
<td>The 2nd Friendship Bridge</td>
<td>Muang Mukdahan</td>
<td>Kaysone Phomvihane</td>
<td>Laos</td>
<td>AH 16</td>
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<td>10</td>
<td>Sungai Kolok</td>
<td>Sungai Kolok</td>
<td>Rantua Panjang</td>
<td>Malaysia</td>
<td>AH 18</td>
</tr>
</tbody>
</table>

Source: Compiled from ESCAP. (2010). Intergovernmental Agreement on the Asian Highway Net Work and Foreign Affairs Division, Office of The Permanent Secretary for Interior, Thailand: online.

The aforementioned highways pass only 10 permanent border crossing points, which are the main gateways of official cross–border trade between Thailand and the neighboring countries (see Table 5). However, there are road networks that link 6 other permanent crossing points along the Thailand–Malaysia border, which are developed by Thai and Malay national development projects. These roads are built to the same standard as the required Asian Highway standard (at least Class III).
Table 6. Road Network Development and Border Crossing Points

<table>
<thead>
<tr>
<th>Road Network Development</th>
<th>Permanent Crossing Point</th>
<th>Check Point for Border Trade</th>
<th>Total</th>
</tr>
</thead>
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<tr>
<td>ASEAN Highway Network Development</td>
<td>11</td>
<td>-</td>
<td>11</td>
</tr>
<tr>
<td>Thailand and Malaysia National Development</td>
<td>6</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Road Network without Development</td>
<td>19</td>
<td>52</td>
<td>71</td>
</tr>
<tr>
<td>Total Crossing Points</td>
<td>36</td>
<td>52</td>
<td>88</td>
</tr>
</tbody>
</table>

Source: Compiled from ESCAP.(2010). Intergovernmental Agreement on the Asian Highway Net Work and Foreign Affairs Division, Office of The Permanent Secretary for Interior, Thailand: online.

Of the 36 total permanent crossing points, there are only 17 where the road networks have been improved to a suitable standard. In other words, there are 19 permanent crossing points as well as 52 checkpoints for border trade are not included in any development plans. Although these crossing points are less important in terms of trade volume, from a transportation perspective they creates linkages between the border areas which are scattered along the 5,000 demarcation lines between Thailand and the neighboring countries. Without any development projects, the road networks of these crossing points in the neighboring countries will remain in poor condition. Most of them are unpaved and difficult to access, particularly in the rainy season (see Figure 11).
The question is, with such road conditions, why do people still cross the borders to Thailand? The answer is because despite the road condition, crossing the border remains a much shorter distance than going inward to markets or trading opportunities in their own countries. In addition, there is a higher variety of consumer products available at the Thai border. As mentioned above, all roads in Thailand that connect to the borders are two–lane paved roads, which enable Thai sellers to transport all kinds of goods to the borders and weekly markets at the checkpoints. These weekly markets are organized by the municipalities to make the purchase and selling of goods more convenient. As long as these conditions remain, these will continue to be the reason that unofficial cross–border trade is still found along the borders of Thailand and Myanmar, Laos, and Cambodia.
6. FUTURE TRENDS AND POTENTIAL IMPACTS

The present state of cross-border trade between Thailand and Malaysia is a good practice to predict what will happen with cross-border trade between Thailand and its three lesser developed neighboring countries. Consumer goods used to be the major commodity traded between the Thailand and Malaysia, often in unofficial markets or transactions. Because of the imbalance between demand and supply, consumer products became the major imports from Malaysia, and Thai people crossed the border into Malaysia to buy or even smuggle consumer goods. To solve this problem, Thailand improved its manufacturing capability as well as the road network, and goods became more easily accessible to the southern part of the country. This affected the pattern of commodities traded at the border and between the two countries: consumer goods were no longer the major imports from Malaysia and unofficial cross-border trade essentially disappeared from the border. Consequently it can be hypothesized that if Myanmar, Laos, and Cambodia are able to improve their manufacturing capability and road networks, the nature of the cross-border trade between those countries and Thailand will change, as happened at the Thailand–Malaysia border. Figure 13 shows that over the past 17 years the GDP from manufacturing of Myanmar, Laos and Cambodia have been increasing steadily. This is especially the case for Myanmar which at present is growing aggressively. It is probable that in the future these three neighboring countries may not depend on consumer goods from Thailand.
Based on the data presented in Table 7, Malaysia has the best road network, as compared with its peers; the roads in the country are 81% paved, and it has the densest coverage at 476 kilometers per 1,000 square kilometers. This makes it easy to transport goods widely for distribution. These conditions, which are close to those of Thailand, reduce the need for border residents to cross the border to buy goods, as they can be bought within their
countries or transported to border areas more easily. Based on the above data, the road length densities of Thailand, Myanmar and Cambodia are not much different. Although the road length density of Laos is lower, it is still acceptable. What makes the road condition of the three countries significantly different from of Thailand is the proportion of paved roads. If these countries can manage to increase the quantity and/or distance of paved roads, especially those not included in the ASEAN Highway Network, the trade pattern is likely to undergo significant change. Unofficial cross-border trade may disappear as it did from the Thai-Malaysia border.

Figure 14. Example of the Roads of Thailand and Malaysia connecting to the border of Thailand (left) and Malaysia (right).

7. CONCLUSION

The major factors that determine the cargo type and the nature of cross-border trade are the manufacturing capabilities and the road networks of Thailand and its neighboring countries. The improvement of manufacturing capabilities of the three neighboring countries (Myanmar, Laos and Cambodia) would potentially change their roles from end users to production centers. Hence imported commodities from Thailand may not be finished products of consumer goods but instead raw materials for manufacturing. Thus, the nature of the transport network would change - cross-border transportation will be further. Instead of from border to border, it will become from production center to production center. The development of road networks in these countries will also enable cargo to be distributed effectively. This will lead to unofficial cross-border trade
significantly decreasing or no longer existing at the borders. Such a disappearance of unofficial cross–border trade will have a direct impact on the local economies of Thailand, because the unofficial cross–border traders are major inhabitants of the border towns including not just traders but transport operators as well. The agricultural sector will also be affected, as agricultural goods are also one of the major exported items. Finally, goods transportation in unofficial cross–border trade is a labor-intensive activity, so the absence of the unofficial cross–border trade may cause significant unemployment problem in the border areas. Despite all of this, the changing nature of cross–border trade in these areas is only a matter of time as the neighboring countries improve their manufacturing and transportation capacities. Therefore, it is important for Thailand to realize this and prepare for it.

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PANEL DISCUSSION
The Value of ASEAN Logistics Connectivity: Reality and Myth

Panelists

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Dr. Vo Tri Thanh: Central Institute for Economic Management, Vietnam
Dr. Tien F. Fwa: Center for Maritime Studies, National University of Singapore
Ms. Pipong Phimphachanh: Faculty of Engineering, National University of Laos
Ms. Swe Swe Zin: Department of Shipping Management, Myanmar Maritime University

Moderator

Dr. Sompong Sirisoponsilp: Transportation Institute, Chulalongkorn University, Thailand

The panelists were asked to respond to the following three specific questions:

- What are the tangible benefits that we can expect when the logistics connectivity is implemented?
- Which specific challenges or risks that we must be seriously concerned with?
- Which specific actions to be taken by each group of stakeholders to ensure maximizing the desired outcomes and at the same time minimizing the risks or negative consequences resulting from the implemented logistics connectivity?

Tangible Benefits of the Logistics connectivity

There has been a strong political will among ASEAN leaders to implement the ASEAN logistics connectivity as stated in the Master Plan on ASEAN Connectivity. The ASEAN logistics connectivity will strengthen the ASEAN economic integration by facilitating the seamless flows of goods, services, and people across the ASEAN region and eventually reducing transaction costs of intra-regional trades. The logistics connectivity facilitates an increase in productivity by allowing manufacturers the greater flexibility to move their facilities to the most advantageous locations. This will enhance trade efficiency and
productivity, such gain will bring about reduction in product price and higher product quality that will definitely benefit ASEAN consumers. Furthermore, better logistics connections and services will improve the “ease of doing business in ASEAN” thereby enhancing ASEAN’s attractiveness as foreign direct investment destination. Logistics connection constitutes a backbone to create the region as a single market and a production network to serve worldwide demand. In sum, the logistics connectivity will contribute to the significant advancement of economic and social development in the ASEAN region.

However, there is a concern that it is insufficient to concentrate only on intra-ASEAN connectivity. ASEAN members must work closely together to effectively and efficiently enhance the integration of ASEAN with the rest of the world. For the immediate programs, it includes Japan, China, Korea, and India. There have been major developments in logistics connectivity taken place in the other parts of the world that better link those areas to the global market which would seriously hamper the relative competitiveness of ASEAN in the international trade arena. The extended ASEAN would involve flows of investments in supporting soft and hard infrastructure. ASEAN member countries must realize the interdependency among them and must swiftly act in the integrative manner to place ASEAN as a whole in a very advantageous position in the highly competitive global market.

**Challenges and Risks**

The Master Plan on ASEAN Connectivity stated that the negative impacts of increased transport connectivity include the spread of HIV/AIDS, human and wildlife trafficking and environmental degradation. Unfortunately, the Master Plan devoted sparse attention to address these negative impacts and no concrete initiatives or measures were proposed to minimize these adverse effects.

Besides those undesired impacts already mentioned in the Master Plan, the panelists raised some concerns about the following additional risks and challenges that ASEAN members may encounter during and after the implementation of the logistics connectivity
• Institutional failure due to the lack of commitment among ASEAN members: This will cause severe delay in the execution of many programs and in the realization of the benefits from the logistics connectivity. It is vital that ASEAN member countries must align their national priorities with the Master plan to ensure that the required resources will be committed.

• Lack of financial resources: ASEAN members altogether may not have sufficient resource to complete the intended logistics connectivity. There is certainly a need to seek funding from non-ASEAN countries such as China, Japan, and Korea. The key challenge will be to establish effective engagement with all the key external partners in order to mobilize the needed resources.

• Development gaps: Development disparities exist in ASEAN, especially those between more recent ASEAN members (CLMV) and older ASEAN members. The successful progressive enhancement of ASEAN logistics connectivity will largely depend on the ability to raise the quality of logistics infrastructure, the performance of available logistics services, government capability, and competency of doing businesses presently exhibited in less developed members to be in par with the other ASEAN counterparts.

• Role of private sectors: Private sectors should be encouraged to take a more active role in the implementation of logistics connectivity through the PPP (Public-Private Partnership) scheme. ASEAN members should learn from other nations’ experience and success with the PPP scheme such as Australia and Japan.

• Distribution of benefits and costs among ASEAN members and among different stakeholders. There will be the opportunity cost of money associated with the logistics connectivity as the implementation of logistics connectivity will consume scarce financial resources that can be invested for other purposes. Additional costs are required to help various stakeholders to make adjustments or to prepare for the enhanced logistics connectivity. There is also a concern that some ASEAN members may enjoy relatively greater economic growth than the
other sand there is a discrepancy in the capability of ASEAN members in capturing the value to be induced by the logistics connectivity. Certain effective mechanisms must be devised and put in place to maximize the likelihood that the benefits and costs will be distributed more fairly among ASEAN members and other stakeholders.

Key Actions

There is a necessity to conduct further detailed and comprehensive study on the impacts of the ASEAN logistics connectivity. The study will be designed to carefully identify and assess the full range of potential impacts to be realized by different countries and stakeholders. The solid information on the benefits to be derived from the ASEAN logistics connectivity will help convincing ASEAN leaders to fully commit the necessary resources to the implementation of the planned logistics connectivity. The study findings will also become valuable information for devising measures to bring about equitable distribution of the potential benefits and costs throughout the ASEAN region. The related studies not only deal with potential benefits but also with the undesirable impacts of logistics connectivity.

The panel discussion placed a great emphasis on the establishment of the effective mechanisms or units to coordinate and implement the harmonization of rules, regulations, and relevant logistics standards and the development of advanced monitoring system to track and evaluate the progress of the implementation of the logistics connectivity. The coordination will not be dominated by government agencies but to encourage proactive participation from private entities, communities, and universities. More pilot projects should be promoted to handle different aspects of bottlenecks that take place in the areas of connectivity such as in cross-border transactions, infrastructure, and human resources development.
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<tbody>
<tr>
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<td>PhD. in Transport Studies, University of Sydney, Australia</td>
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<td>Present Position</td>
<td>Lecturer in Logistics Management and Business Studies</td>
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**Research Experience**

- Feasibility Study of Establishing Free Trade Agreement between Thailand and Canada, Thailand and Japan, Thailand and Australia, Thailand and New Zealand, and ASEAN Economic Integration
- The Development of Master Plan for Laem Chabang Port to Cope with ASEAN Economic Integration
- The Enhancement of Facilitation of Trade in Goods, Services, and Investment in Central Region Part of Thailand to Cope with ASEAN Economic Integration
- Feasibility Study of Developing Ferry Services Connecting Pattaya and Hua – Hin / Cha Um in Thai Gulf
- Logistics Management in Operational Level in Flood Crisis in the Northeastern Region of Thailand
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<td><strong>Education</strong></td>
<td>Master of Economics in Statistics, Yangon Institute of Economics, Myanmar</td>
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Specialization  Operations and Supply Chain Management

Research Experience  
- Drama theory on supply chain collaboration  
- Design for supply chain collaboration  
- Logistics practices in Indonesia  
- Heavy equipment supply chain  
- Distribution analysis of LPG in Indonesia  
- Creative industry development in Indonesia
Name: Mrs. Sumalee Sukdanont

Education: Master in Port Management and Harbor Administration, University of Antwerp, Belgium

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Specialization: Cross–border Trade and Transport, Maritime Transport

Research Experience:

- Cross–border trade and transport in the sub–regions such as Quadrangle Economic Zone, Indonesia–Malaysia–Thailand Growth Triangle, Mekong Riparian Countries
- Development of cross–border trade and transport geo–spatial database
- Development of strategic plan for liberalization of trade in road transportation service
- Comparative studies of Thai ports and the major Ports of the ASEAN Region
- Transport by barge
- Development of shipyard industries in Thailand
ACTIVITIES DURING THE CONFERENCE